



Cisco MDS 9000 Family Documentation Roadmap, Release 3.x to 6.x

Updated: May 13, 2013

This document describes the Cisco MDS 9000 Family documentation that is available online; and includes the following sections:

- [Available Features and Topics for Cisco MDS 9000 Family NX-OS Release 6.x, page 1](#)
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Available Features and Topics for Cisco MDS 9000 Family NX-OS Release 6.x

This section lists available features and topics in Cisco MDS 9000 Family Release 6.x documentation. To find content about a specific topic online, use the links in this list.

Feature	New or Changed Topics	Changed in Release	Where Documented
Cisco MDS 9710 Director	The Cisco MDS 9710 Director is a new high-performance SAN switch that is designed to meet the requirements of enterprise data center storage environments.	6.2(1) - (New)	Cisco MDS 9710 Hardware Installation Guide
Cisco MDS 9000 48-Port, 16-Gbps Fibre Channel Switching Module	The Cisco MDS 9000 48-Port 16-Gbps Fibre Channel switching module can be used in the Cisco MDS 9710 Director.	6.2(1) - (New)	Cisco MDS 9710 Hardware Installation Guide



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Feature	New or Changed Topics	Changed in Release	Where Documented
Generic Online Diagnostic	The generic online diagnostics (GOLD) feature allows you to test and verify the hardware functionality of a device while the device is connected to a live network.	6.2(1) - (New)	Cisco MDS 9000 System Management Configuration Guide
LDAP/AD Users	This feature maps LDAP/AD users to Cisco NX-OS roles and allows both local and remote users to use SSH or Telnet.	6.2(1) - (New)	Cisco MDS 9000 Security Configuration Guide
Command Line Interface (CLI) Changes	Enhance the clear snmp counters command. Display ISL related information. Display a warning messages for a shared port interface when you bring down the port. Display throughput information for all ports on a line card or ISL or on a switch or chassis. Provide an estimated time for DMM job completion. Shorten the show dmm job job-id 50571379 session session_id (1-20) command	6.2(1) - (Revised)	Cisco MDS 9000 Command Reference

Available Features and Topics for Cisco MDS 9000 Family NX-OS Release 5.x

This section lists available features and topics in Cisco MDS 9000 Family Release 5.x documentation. To find content about a specific topic online, use the links in this list.

Feature	New or Changed Topics	Changed in Release	Where Documented
SME Disk	This is a new feature that encrypts the data contained in a disk.	5.2(1) - (New)	Cisco MDS 9000 Family Storage Media Encryption Configuration Guide - Chapter 6, "Configuring SME Disk Management"
Disk Key Replication (DKR) feature	Is used to manage crypto keys of disks involved in a replication relationship.	5.2(1) - (New)	Cisco MDS 9000 Family Storage Media Encryption Configuration Guide - Chapter 6, "Configuring SME Disk Management"

Feature	New or Changed Topics	Changed in Release	Where Documented
Call Home HTTP Proxy Server Support	Added the HTTP proxy server support details.	5.2(1) - (New)	Cisco MDS 9000 Family NX-OS System Management Configuration Guide - Chapter 4, "Configuring Call Home"
AAM support	Added "Enabling AAM Support for IVR" section.	5.0(1a) - (New)	Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide - Chapter 2, "Advanced Inter-VSAN Routing Configuration"
Configuring FCIP	FCIP Compression	5.0(1a) - (New)	Cisco MDS 9000 Family NX-OS IP Services Configuration Guide - FCIP Compression, page 34
Changes to SSH	Passwordless file copy and SSH	5.0(1a) - (New)	Cisco MDS 9000 Family NX-OS Security Configuration Guide - Chapter 3, "Configuring SSH Services."
Configuring TACACS+ Server Monitoring Parameters	Enabling CHAP Authentication	5.0(1a) - (New)	Cisco MDS 9000 Family NX-OS Security Configuration Guide - Chapter 4, "Configuring TACACS+ Server Monitoring Parameters."
Fabric Switches	Added information about different Fabric switches and how to configure them.	5.0(1a) - (New)	Cisco MDS 9000 Family NX-OS Interfaces Configuration Guide - Chapter 4, "Configuring Interface Buffers"
FICON Tape Read Acceleration	Added "FICON Tape Acceleration" section.	5.0(1a) - (New)	Cisco MDS 9000 Family NX-OS Fabric Configuration Guide - Chapter 11, "Configuring FICON"
IOA is supported with IVR	Added IVR flows support with IOA.	5.0(1a) - (New)	Cisco MDS 9000 Family I/O Accelerator Configuration Guide - Chapter 3, "Deployment Considerations"
IOA support	Updated "Enabling Advanced Fabric Services on IVR Flows" section.	5.0(1a) - (Enhanced)	Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide - Chapter 2, "Advanced Inter-VSAN Routing Configuration"
ISAPI enhancements	Added information about ISAPI enhancements.	5.0(1a) - (New)	Cisco MDS 9000 Family I/O Accelerator Configuration Guide - Chapter 4, "Configuring IOA Using the CLI"
Multiple SMTP Server Support	Added Multiple SMTP Server Support details. Added Verifying Callhome Transport Commands.	5.0(1a) - (New)	Cisco MDS 9000 Family NX-OS System Management Configuration Guide - Chapter 4, "Configuring Call Home"

Feature	New or Changed Topics	Changed in Release	Where Documented
OTP Authentication	One Time Password Support	5.0(1a) - (New)	Cisco MDS 9000 Family NX-OS Security Configuration Guide - Chapter 4, "Configuring TACACS+ Server Monitoring Parameters."
SFP Diagnostic Information	Added information on displaying SFP diagnostic information.	5.0(1a) - (New)	Cisco MDS 9000 Family NX-OS Interfaces Configuration Guide - Chapter 3, "Configuring Fibre Channel Interfaces"

Available Features and Topics for Cisco MDS 9000 Family NX-OS Release 4.x

This section lists available features and topics in Cisco MDS 9000 Family NX-OS Release 4.x documentation. To find content about a specific topic online, use the links in this list.

Feature	New or Changed Topics	Changed in Release	Where Documented
Advanced IVR configuration	Reorganized advanced IVR configuration information.	4.2(1) - (Enhanced)	Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide - Chapter 2, "Advanced Inter-VSAN Routing Configuration"
	Added "Working with Existing IVR Topologies" section.		Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide - Working With Existing IVR Topologies, page 12
	Added "Advanced Configuration Task List" section.		Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide - Advanced IVR Configuration Task List, page 2
	Added IVR Zone configuration guidelines.		Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide - IVR Zone Configuration Guidelines
AAA enhancements	Added information on authentication and authorization.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS Security Configuration Guide - Chapter 4, "Configuring RADIUS and TACACS+"
Basic IVR configuration	Reorganized basic IVR configuration information.	4.2(1) - (Enhanced)	Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide - Chapter 1, "Basic Inter-VSAN Routing Configuration"
Call Home HTTPs support	Added Call Home HTTPs enhancement.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS System Management Configuration Guide - Chapter 4, "Configuring Call Home"

Feature	New or Changed Topics	Changed in Release	Where Documented
Call Home	Added the HTTPS support for Call Home.	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 53, "Configuring Call Home"
CCP and IP Route	Added procedure to configure an IP Route using Fabric Manager.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS IP Services Configuration Guide - Chapter 5, "Configuring IP Services."
Command history	Provides changes to the show cli history command.	4.2(1)	Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide - Understanding the Command-Line Interface
Command modes	Allows saving and restoring of command modes.	4.2(1)	Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide - Understanding the Command-Line Interface
Confirmation prompts	Allows enabling and disabling for command confirmation prompts.	4.2(1)	Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide - Understanding the Command-Line Interface
Command aliases	Can be used in show command searching and filtering. Allows command aliases for users sessions.	4.2(1)	Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide - Understanding the Command-Line Interface
Crossbar management with Fabric 2 modules	Updated crossbar management section for Generation 3 modules.	4.1(b) - (Enhanced)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 11, "Managing System Hardware"
diff utility	Allows comparison of command outputs.	4.2(1)	Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide - Understanding the Command-Line Interface
DPVM configuration	Added DPVM configuration commands and guidelines	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 22, "Creating Dynamic VSANs"
Embedded Event Manager (EEM)	New chapter on configuring Embedded Event Manager (EEM) has been added.	4.1(3) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 54, Configuring Embedded Event Manager

Feature	New or Changed Topics	Changed in Release	Where Documented
Feature configuration commands	feature { cimserver cluster crypto dpvm fabric-binding fcip fcrxbcredit fcsf ficon iscsi ivr npiv port-security port-track san-ext-tuner scheduler sdv sme ssh tacacs+ telnet } command replaces the existing enable commands. For example, enable fcip is deprecated and replaced by feature fcip . All the other feature configuration commands are unchanged.	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 2, "Before You Begin" and related chapters
F Port Trunking	Added information about configuring F port trunking across the chapter including key concepts, guidelines and restrictions, upgrade and downgrade considerations, trunking and channeling protocols, trunk modes, and allowed VSAN lists.	4.1(3) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 16, Configuring Trunking
F and TF PortChanneling	Added information about configuring F and TF PortChannels including guidelines and restrictions, interface addition, and compatibility check.	4.1(3) - (Enhanced)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 17, Configuring PortChannels
Generation 3 48-Port, 24-Port, and 4/44-Port 8-Gbps Fibre Channel modules configuration	Added configuration guidelines that includes port groups, port rate modes, BB_credit buffer allocation, port speed configuration, over-subscription ratio restrictions, combining with earlier generation modules, upgrade and downgrade considerations, crossbar management, port channel interface configuration, example configurations, and default settings.	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 15, "Configuring Generation 2 and Generation 3 Switching Modules"
I/O module commands	Allows sending commands directly to a module from the supervisor module session.	4.2(1)	Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide - Understanding the Command-Line Interface
Initial Setup Routine	Updated initial switch bootup configuration steps.	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 5, "Initial Configuration"

Feature	New or Changed Topics	Changed in Release	Where Documented
IP Static Peers for CFS over IP	Added IP static peers configuration steps for CFS distribution over IP.	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 7, "Using the CFS Infrastructure"
IPv6 support on GigE ports	Added IPv6 support on GigE ports of MS 18+4 and 9222i for FCIP and ISCSI.	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 47, "Configuring IPv6 for Gigabit Ethernet Interfaces"
IPv4 and IPv6 Access Control Lists	Added a section on applying an IP-ACL to mgmt0.	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 35, "Configuring IPv4 and IPv6 Access Control Lists"
MSCHAPv2	Added information on MSCHAP version 2 for authentication on a RADIUS server.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS Security Configuration Guide - Chapter 4, "Configuring RADIUS and TACACS+"
MSM 18+4 and MDS 9222i support	Added SSI support on MSM 18+4, and MDS 9222i.	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 12, "Managing Modules"
Per-command authorization with TACACS+ without roles support	Added information for user authorization on a TACACS+ server.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS Security Configuration Guide - Chapter 4, "Configuring RADIUS and TACACS+"
Port Group Monitor	Added information about configuring policies and monitoring port groups.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS Interfaces Configuration Guide - Chapter 2, "Configuring Interfaces"
Port Guard	Added port guard configuration guidelines for multiple types of port failure causes.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS Interfaces Configuration Guide - Chapter 2, "Configuring Interfaces"
Port Guard and Port Owner	Added port guard and port owner configuration procedures.	4.1(3) - (New)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 13, Configuring Interfaces
SNMP Central Infra feature	Added the new SNMP Central Infra feature details.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS System Management Configuration Guide - Chapter 9, "Configuring SNMP"
Software change	As of Release 4.1(1b) and later, the MDS SAN-OS software is changed to MDS NX-OS software. The earlier releases are unchanged and all references are retained.	4.1(b) - (New)	Cisco MDS 9000 Family CLI Configuration Guide. (All Chapters)
SSM (SSI) Upgrade Delay	Added a topic on SSI upgrade delay timer configuration for SSMs and MSMs.	4.1(b) - (Enhanced)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 12, "Managing Modules"

Feature	New or Changed Topics	Changed in Release	Where Documented
Scheduler Job Configuration	Updated the scheduler job configuration command syntax and guidelines.	4.1(b) - (Enhanced)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 19, "Scheduling Maintenance Jobs"
SAN Device Virtualization	Updated with automatic failover and fallback configuration information.	4.1(b) - (Enhanced)	Cisco MDS 9000 Family CLI Configuration Guide - Chapter 21, "SAN Device Virtualization"
SANTap support on MSM 18+4 and MDS 9222i	Added the SANTap support on Cisco MDS 9000 Family 18/4-Port Multiservice Module (MSM-18/4).	4.1(b) - (New)	Cisco MDS 9000 Family SANTap Deployment Guide
show command output redirection	You can change the format of the show command output when you redirect it to a file. The format can be ASCII or zipped.	4.2(1)	Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide - Using the Device File Systems, Directories, and Files
Streaming secure copy (sscp)	Allows redirection of command output to SSH sessions on remote servers.	4.2(1)	Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide - Understanding the Command-Line Interface
Terminal colors	Allows changes to the colors used for CLI elements in the terminal display.	4.2(1)	Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide - Understanding the Command-Line Interface
TrustSec FC LE Added information for the link-level encryption between MDS switches.		4.2(1) - (New)	Cisco MDS 9000 Family NX-OS Security Configuration Guide - Chapter 4, "Configuring RADIUS and TACACS+" Cisco MDS 9000 Family NX-OS Security Configuration Guide - Chapter 8, "Configuring FC-SP and DHCHAP" Cisco MDS 9000 Family NX-OS Security Configuration Guide - Chapter 11, "Configuring Cisco TrustSec Fibre Channel Link Encryption"
X2 DWDM	Added information about configuring X2 DWDM transceiver frequency.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS Fabric Configuration Guide - Chapter 8, "Configuring Dense Wavelength Division Multiplexing"
XRC Acceleration	Added information about configuring XRC Acceleration.	4.2(1) - (New)	Cisco MDS 9000 Family NX-OS Fabric Configuration Guide - Chapter 11, "Configuring FICON"

Available Features and Topics for Cisco MDS 9000 Family SAN-OS Release 3.x

This section lists available features and topics in Cisco MDS 9000 Family SAN-OS Release 3.x documentation. To find content about a specific topic online, use the links in this list.

Feature	New or Changed Topics	Changed in Release	Where Documented
About SAN Ext Tuner	Added a note on SAN support for Multiservice Module (MSM) and the Multiservice Modular Switch.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 42, Configuring the SAN Extension Tuner
Configuring Generation 2 Switches and Modules	Updated table Bandwidth and Port Groups for Generation 2 FC Modules and Fabric Switches in Port Groups section.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 15, "Configuring Generation 2 Switches and Modules"
Configuring Inter-VSAN Routing	Updated for no IVR support on MDS 9134 Fabric Switch.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 23, "Configuring Inter-VSAN Routing" s
Configuring SNMP Users from the CLI	Removed des from the command snmp-server user user1 role1 auth md5 0xab0211gh priv 0x45abf342 localizedkey in to create or modify passwords for SNMP users from the CLI.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 33, Configuring SNMP
Common Information Model	Added commands for displaying Common Information Model.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 60, Monitoring System Processes and Logs
Configuring iSCSI	Added the enable and disable command for modules in the iSCSI feature.	3.2(2b)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 43, "Configuring iSCSI"
CFS enhancements	Support for CFS regions.	3.2(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 7, "Using the CFS Infrastructure"
Cisco MDS 9134 Multilayer Fabric Switch	Added updates about support or non-support of the switch throughout the book.	3.2(1)	Chapter 3, "Obtaining and Installing Licenses" Chapter 8, "Software Images" Chapter 15, "Configuring Generation 2 Switches and Modules"
Cisco CompactFlash CRC Checksum Test	Enables users to run the CompactFlash CRC Checksum test and update CompactFlash firmware.	3.1(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 11, "Managing System Hardware"

Feature	New or Changed Topics	Changed in Release	Where Documented
Cisco 32-port switching module	Added a new guideline for copying a saved configuration that contains the no system default switchport shutdown command , and the effect that has on E-port configuration.	3.1(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 17, "Configuring PortChannels"
Cisco Fabric Switch for HP c-Class BladeSystem and Cisco Fabric Switch for IBM BladeCenter	Added updates about support or non-support of the switches throughout the book.	3.1(2)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 4, "On-Demand Port Activation Licensing" Chapter 8, "Software Images"
Cisco MDS 9124 Fabric Switch support	Updates throughout the book to reflect support of the Cisco MDS 9124 Fabric Switch.	3.1(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 1, "Product Overview"
Command scheduler remote user support	Allows remote users to configure command scheduler jobs.	3.0(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 19, "Scheduling Maintenance Jobs"
Distributing Device Alias Services	Updated the second bullet in Database Merge Guidelines.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 25, "Distributing Device Alias Services"
EMC Email Home	EMC Email Home configuration information was added to the CallHome chapter.	3.3(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 55, Configuring Call Home
Enable/disable up/down link	Allows users to enable or disable SNMP link-state traps on specific interfaces.	3.1(2)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 33, "Configuring SNMP"
Enabling the Buffer-to-Buffer State Change Number	Added information on BB_SCN on ISLs.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 15, "Configuring Generation 2 Switches and Modules"
First and Last Core	Added updates on First and Last core commands and Verification.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 30, Advanced Features and Concepts
FlexAttach Virtual pWWN	Added new chapter for this new feature.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 6, Configuring FlexAttach Virtual pWWN
FICON Tape Accelartion	Provides acceleration for FICON tape write operations over FCIP for the IBM Virtual Tape Server (VTS) and tape libraries that support the 3490 command set.	3.1(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 29, "Configuring FICON"
IP Network Simulator	Added a note on IP Network Simulator support for Multiservice Module (MSM) and the Multiservice Modular Switch.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 59, Troubleshooting Your Fabric

Feature	New or Changed Topics	Changed in Release	Where Documented
IP Network Simulator	Allows users to simulate network conditions to test the impact of network latency for FCIP or iSCSI.	3.1(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 59, "Troubleshooting Your Fabric"
Migrating from Supervisor-1 Modules to Supervisor-2 Modules	Updated the steps for migrating from Supervisor-1 modules to Supervisor-2 modules on a Cisco MDS 9509 or 9506 switch.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 8, "Software Images"
NPV Traffic Management	Added information on NPV Traffic Management throughout the NPV chapter.	3.3(1a)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 14, Configuring N Port Virtualization
Non-disruptive upgrades on the Cisco MDS 9124 Fabric Switch	Describes non-disruptive upgrades on the Cisco MDS 9124 Fabric Switch.	3.1(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 8, "Software Images"
Obtaining and Installing Licenses	Removed the prefix "VDH=" from HostID serial number.	3.2(2b)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 3, "Obtaining and Installing Licenses"
On-Demand Port Activation Licensing	Added port naming conventions and switch behavior of Cisco Fabric Switch for HP c-Class BladeSystem and Cisco Fabric Switch for IBM BladeCenter.	3.1(2)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 4, "On-Demand Port Activation Licensing"
On-demand port activation licensing	Allows users to buy additional licenses for ports in the Cisco MDS 9124 Fabric Switch, and to also move licenses among ports.	3.1(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 4, "On-Demand Port Activation Licensing"
Running the CompactFlash Report	Enables users to run the CompactFlash Check utility to generate a report that shows the status of CompactFlash on certain line cards.	3.1(2)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 11, "Managing System Hardware"
SANTap enhancements	Provides for 32-bit support and dynamic LUNs.	3.2(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 50, "Configuring SANTap"
System default port mode F	Added information about the system default switchport mode F feature and command.	3.1(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 5, "Initial Configuration" Chapter 13, "Configuring Interfaces"
SAN device virtualization	Allows you to create virtual devices that represent physical end devices when configuring switches.	3.1(2)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 21, "SAN Device Virtualization"
TACACS+ password expiry notification	Password aging notification is initiated when the TACACS+ server authenticates access to the switch through Telnet or SSH.	3.2(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 34, "Configuring RADIUS and TACACS+"

Feature	New or Changed Topics	Changed in Release	Where Documented
Removal of restrictions on oversubscription ratios	Allows users to remove any restrictions on maximum oversubscription ratios.	3.1(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 15, "Configuring Generation 2 Switches and Modules"
Generation 2 switching modules	Provides default support for Fibre Channel ACL adjacency sharing on Generation 2 switching modules.	3.0(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 15, "Configuring Generation 2 Switches and Modules"
IVR zones and zone members	Increases the limits for IVR zones to 8000 and for IVR zone members to 20,000	3.0(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 23, "Configuring Inter-VSAN Routing"
show tech-support command	Allows you to specify new options for the show tech-support command for specific features.	3.0(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 59, "Troubleshooting Your Fabric"
RLIR messages	Allows you to specify a server to receive Registered Link Incident Report (RLIR) frames.	3.0(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 29, "Configuring FICON"
User configuration limit	Sets the maximum number of users on a switch to 256.	3.0(3)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 39, "Configuring Users and Common Roles"
Domain manager fast restart	Allows the domain manager to quickly recover from a principal link failure when a backup link is available.	3.0(2)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 18, "Configuring Domain Parameters"
FICON port prohibiting default	Allows you to change the default setting for port prohibiting.	3.0(2)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 29, "Configuring FICON"
install ssi command	Copies the SSI boot image file to the SSM modflash:	3.0(2)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 12, "Managing Modules"
AAA server enhancements	Includes the following AAA server enhancements: - Monitoring and validating the availability of remote AAA servers. - Allowing users to specify a remote AAA server name at login. - Displaying AAA server statistics.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 34, "Configuring RADIUS and TACACS+"
Auto port mode support change	Disallows configuring auto port mode on Storage Services Module (SSM) Fibre Channel interfaces.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 13, "Configuring Interfaces"

Feature	New or Changed Topics	Changed in Release	Where Documented
boot auto-copy command enabled by default	Changes the default state for the boot auto-copy command to enabled.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 10, "Configuring High Availability"
Call Home enhancement	Allows customization of alert group messages.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 55, "Configuring Call Home"
CFS over IP	Allows CFS distributions over IP connections.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 7, "Using the CFS Infrastructure"
CFS support for allowed domain ID lists	Allows the allowed domain ID lists to be distributed in the fabric using the CFS infrastructure.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 18, "Configuring Domain Parameters"
Certificate authorities and digital certificates	Describes interoperating with certificate authorities and using digital certificates for secure communication with peers.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 36, "Configuring Certificate Authorities and Digital Certificates"
CFS support for RSCN	Allows the RSCN timer value to be distributed in the fabric using the CFS infrastructure.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 27, "Managing FLOGI, Name Server, FDMI, and RSCN Databases"
Change to show ip access-list command	Deprecates the usage option.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 35, "Configuring IPv4 and IPv6 Access Control Lists"
CLI enhancements	Includes the following CLI enhancements: - User-defined command variables. - User-defined aliases for common commands. - The pwc command displays the list of commands entered to reach a command submode. - Command variable support in the run-script command.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 2, "Before You Begin"
Configuration check	Describes the changes to the show incompatibility system command that indicate the commands to use to disable features before downgrading to an earlier release of the system image.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 8, "Software Images"

Feature	New or Changed Topics	Changed in Release	Where Documented
Configuration format change	Describes the multiple entry format for displaying interface configuration information in the show running-config and show startup-config command outputs.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 2, "Before You Begin" Chapter 13, "Configuring Interfaces"
Crossbar removal procedures	Provides the recommended procedures to prepare to remove crossbars from Cisco MDS 9500 Series Directors.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 11, "Managing System Hardware"
Device alias rename	Allows existing device aliases to be renamed.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 25, "Distributing Device Alias Services"
Dynamic initiator modes	Allows configuration of dynamic initiator modes iSCSI, iSLB, and deny log in to the MDS switch.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 43, "Configuring iSCSI"
Fabric binding for Fibre Channel	Supports fabric binding for Fibre Channel VSANs as well as FICON VSANs.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 40, "Configuring Fabric Binding"
fcid-last-byte command deprecated	Does not support the fcid-last-byte command.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 29, "Configuring FICON"
FCIP read tape acceleration	Supports tape read acceleration over FCIP interfaces as well as tape write acceleration.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 41, "Configuring FCIP"
FICON port numbering	Provides information on the changed default port numbering scheme for Generation 2 hardware and how to assign port numbers when a switch has more than 255 ports.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 29, "Configuring FICON"
FICON port swapping	Provides the ability to port swap using the interface identifier when there are duplicate port numbers on a switch.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 29, "Configuring FICON"
Generation 2 switching module support	Describes how to configure interfaces on the Generation 2 Fibre Channel switching modules.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 15, "Configuring Generation 2 Switches and Modules"
IKE digital certificate support	Allows IKE to use digital certificates for authentication instead of using preshared keys.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 37, "Configuring IPsec Network Security"

Feature	New or Changed Topics	Changed in Release	Where Documented
IKE fully qualified domain name (FQDN)	Includes using FQDNs, as well as IPv4 addresses, for the following IKE features: • Preshared keys • Identity mode	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 37, "Configuring IPsec Network Security"
In-order-delivery enhancement	Ensures that frames are delivered in order within the switch latency drop period.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 26, "Configuring Fibre Channel Routing Services and Protocols"
Increased zone limit per VSAN	Increases the maximum number of zones per VSAN from 2000 to 8000.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 24, "Configuring and Managing Zones"
IPv6	Provides support for IP version 6 (IPv6).	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 44, "Configuring IP Services" Chapter 47, "Configuring IPv6 for Gigabit Ethernet Interfaces"
IPv6 access control lists (IPv6-ACLs)	Describes the support for IPv6-ACLs.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 35, "Configuring IPv4 and IPv6 Access Control Lists"
iSCSI server load balancing (iSLB)	Provides information on how to easily configure large iSCSI deployments.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 43, "Configuring iSCSI"
iSNS cloud discovery	Provides information to iSNS on the various interfaces reachable from an initiator by partitioning the interfaces on a switch into disjointed IP clouds.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 43, "Configuring iSCSI"

Feature	New or Changed Topics	Changed in Release	Where Documented
IVR enhancements	Includes the following IVR enhancements: • Allowing more than one active IVR service group. • Renaming IVR zones (IVZs). • Renaming IVR zone sets (IVZSs). • Copying the active IVZS to the full IVZS to be edited and reactivated. • Copying the active IVR topology to the manually configured IVR topology. • Copying the active IVR service group database to the configured IVR service group database. • Clearing the configured IVR service group database.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 23, "Configuring Inter-VSAN Routing"
MSCHAP	Provides support for the Microsoft Challenge Handshake Authentication Protocol (MSCHAP).	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 34, "Configuring RADIUS and TACACS+"
N-port identifier virtualization (NPV)	Provides support for multiple N port identifiers to support multiple applications on a server accessing an MDS switch.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 13, "Configuring Interfaces"
SAN extension tuner enhancement	Describes how to assign tape read and write commands to N ports.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 42, "Configuring the SAN Extension Tuner"
SFP diagnostic information	Describes the show interface transceiver command change to display SFP diagnostic information on Generation 2 modules.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 15, "Configuring Generation 2 Switches and Modules"
SSH authentication enhancement	Provides digital certificate support for host authentication.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 39, "Configuring Users and Common Roles"

Feature	New or Changed Topics	Changed in Release	Where Documented
Supervisor-2 module support	Includes support for the following Supervisor-2 module features: - Configuring modem parameters on the console port and COM1 port. - Allowing 1000 Mbps speed on the management port	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 5, "Initial Configuration"
Supervisor module management procedures	Includes the following recommended supervisor module management procedures: - Preparing to remove supervisor modules from Cisco MDS 9500 Series Directors containing both Generation 1 and Generation 2 switching modules. - Migrating from Supervisor-1 modules to Supervisor-2 modules in the Cisco MDS 9500 Series Directors.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 8, "Software Images"
RMON high capacity alarms	Provides the show rmon high capacity alarms command to display RMON high capacity alarm values.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 52, "Configuring RMON"
RSCN timer configuration	Allows the RSCN timer value to be configured.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 27, "Managing FLOGI, Name Server, FDMI, and RSCN Databases"
QoS behavior	Provides information about the behavior of QoS with different combinations of Generation 1 and Generation 2 switching modules.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 57, "Configuring Fabric Congestion Control and QoS"
Zone analysis	Provides a means to analyze zone characteristics using the show zone analysis command.	3.0(1)	Cisco MDS 9000 Family CLI Configuration Guide, Chapter 24, "Configuring and Managing Zones"

Related Documentation

The documentation set for the Cisco MDS 9000 Family includes the documents listed in this section. To find a document online, access the following URL:

http://www.cisco.com/en/US/products/ps5989/tsd_products_support_series_home.html

The documentation set for Cisco Prime Data Center Network Manager is available from the following URL:

http://www.cisco.com/en/US/products/ps9369/tsd_products_support_series_home.html

Release Notes

- *Cisco MDS 9000 Family Release Notes for Cisco MDS NX-OS Releases*
- *Cisco MDS 9000 Family Release Notes for MDS SAN-OS Releases*
- *Cisco MDS 9000 Family Release Notes for Storage Services Interface Images*
- *Cisco MDS 9000 Family Release Notes for Cisco MDS 9000 EPLD Images*

Regulatory Compliance and Safety Information

- *Regulatory Compliance and Safety Information for the Cisco MDS 9000 Family*

Compatibility Information

- *Cisco Data Center Interoperability Support Matrix*
- *Cisco MDS 9000 NX-OS Hardware and Software Compatibility Information and Feature Lists*
- *Cisco MDS NX-OS Release Compatibility Matrix for Storage Service Interface Images*
- *Cisco MDS 9000 Family Switch-to-Switch Interoperability Configuration Guide*

Hardware Installation

- *Cisco MDS 9710 Director Hardware Installation Guide*
- *Cisco MDS 9500 Series Hardware Installation Guide*
- *Cisco MDS 9500 Series Supervisor-2A Tech Note*
- *Cisco MDS 9200 Series Hardware Installation Guide*
- *Cisco MDS 9100 Series Hardware Installation Guide*

Software Installation and Upgrade

- *Cisco MDS 9000 NX-OS Software Upgrade and Downgrade Guide*

Cisco NX-OS Configuration Guides

- *Cisco MDS 9000 Family NX-OS Licensing Guide*
- *Cisco MDS 9000 Family NX-OS Fundamentals Configuration Guide*
- *Cisco MDS 9000 Family NX-OS System Management Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Interfaces Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Fabric Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Quality of Service Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Security Configuration Guide*

- *Cisco MDS 9000 Family NX-OS IP Services Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Intelligent Storage Services Configuration Guide*
- *Cisco MDS 9000 Family NX-OS High Availability and Redundancy Configuration Guide*
- *Cisco MDS 9000 Family NX-OS Inter-VSAN Routing Configuration Guide*

Command-Line Interface

- *Cisco MDS 9000 Family Command Reference*

Intelligent Storage Networking Services Configuration Guides

- *Cisco MDS 9000 I/O Acceleration Configuration Guide*
- *Cisco MDS 9000 Family SANTap Deployment Guide*
- *Cisco MDS 9000 Family Data Mobility Manager Configuration Guide*
- *Cisco MDS 9000 Family Storage Media Encryption Configuration Guide*

Troubleshooting and Reference

- *Cisco NX-OS System Messages Reference*
- *Cisco MDS 9000 Family NX-OS Troubleshooting Guide*
- *Cisco MDS 9000 Family NX-OS MIB Quick Reference*
- *Cisco MDS 9000 Family NX-OS SMI-S Programming Reference*

Obtaining Documentation and Submitting a Service Request

For information on obtaining documentation, submitting a service request, and gathering additional information, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

<http://www.cisco.com/en/US/docs/general/whatsnew/whatsnew.html>

Subscribe to the *What's New in Cisco Product Documentation* as a Really Simple Syndication (RSS) feed and set content to be delivered directly to your desktop using a reader application. The RSS feeds are a free service and Cisco currently supports RSS version 2.0.

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