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## **Cisco Fabric Manager Intelligent Storage Services Configuration Guide**

Cisco MDS NX-OS Release 4.2(1)  
August 2009

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## New and Changed Information

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As of Cisco MDS NX-OS Release 4.2(1), software configuration information is available in new feature-specific configuration guides for the following information:

- System management
- Interfaces
- Fabric
- Quality of service
- Security
- IP services
- High availability and redundancy

The information in these new guides previously existed in the *Cisco MDS 9000 Family CLI Configuration Guide* and in the *Cisco MDS 9000 Family Fabric Manager Configuration Guide*. Those configuration guides remain available on Cisco.com and should be used for all software releases prior to MDS NX-OS Release 4.2(1). Each guide addresses the features introduced in or available in a particular release. Select and view the configuration guide that pertains to the software installed in your switch.

For a complete list of document titles, see the list of Related Documentation in the “Preface.”

To find additional information about Cisco MDS NX-OS Release 4.2(x), see the *Cisco MDS 9000 Family Release Notes* available at the following Cisco Systems website:

[http://www.cisco.com/en/US/products/ps5989/prod\\_release\\_notes\\_list.htm](http://www.cisco.com/en/US/products/ps5989/prod_release_notes_list.htm)

### **About this Guide**

The information in the new *Cisco Fabric Manager Intelligent Storage Services Configuration Guide* previously existed in Part 7: Intelligent Storage Services of the *Cisco MDS 9000 Family Fabric Manager Configuration Guide*.

There are no new or changed Fabric Manager features for intelligent storage services in MDS NX-OS Release 4.2(1).

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## Preface

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This preface describes the audience, organization, and conventions of the *Cisco Fabric Manager Intelligent Storage Services Configuration Guide*. It also provides information on how to obtain related documentation.

## Audience

This guide is for experienced network administrators who are responsible for configuring and maintaining the Cisco MDS 9000 Family of multilayer directors and fabric switches.

## Organization

This document is organized as follows:

Chapter	Title	Description
<a href="#">Chapter 1</a>	<a href="#">Intelligent Storage Services Overview</a>	Provides an overview of the Intelligent Storage Services supported by the Cisco MDS 9000 NX-OS software.
<a href="#">Chapter 2</a>	<a href="#">Configuring SCSI Flow Services and Statistics</a>	Describes the SCSI flow services and SCSI flow statistics, the Intelligent Storage Services.
<a href="#">Chapter 3</a>	<a href="#">Configuring Fibre Channel Write Acceleration</a>	Describes Fibre Channel Write Acceleration support and configuration.

## Document Conventions

Command descriptions use these conventions:

<b>boldface font</b>	Commands and keywords are in boldface.
<i>italic font</i>	Arguments for which you supply values are in italics.
[ ]	Elements in square brackets are optional.
[ x   y   z ]	Optional alternative keywords are grouped in brackets and separated by vertical bars.

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Screen examples use these conventions:

screen font	Terminal sessions and information the switch displays are in screen font.
<b>boldface screen font</b>	Information you must enter is in boldface screen font.
<i>italic screen font</i>	Arguments for which you supply values are in italic screen font.
< >	Nonprinting characters, such as passwords, are in angle brackets.
[ ]	Default responses to system prompts are in square brackets.
!, #	An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.

This document uses the following conventions:



### Note

Means reader *take note*. Notes contain helpful suggestions or references to material not covered in the manual.



### Caution

Means *reader be careful*. In this situation, you might do something that could result in equipment damage or loss of data.

## Related Documentation

The documentation set for the Cisco MDS 9000 Family includes the following documents. To find a document online, use the Cisco MDS NX-OS Documentation Locator at:

[http://www.cisco.com/en/US/docs/storage/san\\_switches/mds9000/roadmaps/doclocator.htm](http://www.cisco.com/en/US/docs/storage/san_switches/mds9000/roadmaps/doclocator.htm)

## 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*
- *Release Notes for Cisco MDS 9000 Family Fabric Manager*

## 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*



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- *Cisco MDS NX-OS Release Compatibility Matrix for Storage Service Interface Images*
- *Cisco MDS 9000 Family Switch-to-Switch Interoperability Configuration Guide*
- *Cisco MDS NX-OS Release Compatibility Matrix for IBM SAN Volume Controller Software for Cisco MDS 9000*
- *Cisco MDS SAN-OS Release Compatibility Matrix for VERITAS Storage Foundation for Networks Software*

## **Hardware Installation**

- *Cisco MDS 9500 Series Hardware Installation Guide*
- *Cisco MDS 9200 Series Hardware Installation Guide*
- *Cisco MDS 9100 Series Hardware Installation Guide*
- *Cisco MDS 9124 and Cisco MDS 9134 Multilayer Fabric Switch Quick Start Guide*

## **Software Installation and Upgrade**

- *Cisco MDS 9000 NX-OS Release 4.1(x) and SAN-OS 3(x) Software Upgrade and Downgrade Guide*
- *Cisco MDS 9000 Family Storage Services Interface Image Install and Upgrade Guide*
- *Cisco MDS 9000 Family Storage Services Module Software Installation and Upgrade Guide*

## **Cisco NX-OS**

- *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*

## **Cisco Fabric Manager**

- *Cisco Fabric Manager Fundamentals Configuration Guide*
- *Cisco Fabric Manager System Management Configuration Guide*
- *Cisco Fabric Manager Interfaces Configuration Guide*

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- *Cisco Fabric Manager Fabric Configuration Guide*
- *Cisco Fabric Manager Quality of Service Configuration Guide*
- *Cisco Fabric Manager Security Configuration Guide*
- *Cisco Fabric Manager IP Services Configuration Guide*
- *Cisco Fabric Manager Intelligent Storage Services Configuration Guide*
- *Cisco Fabric Manager High Availability and Redundancy Configuration Guide*
- *Cisco Fabric Manager Inter-VSAN Routing Configuration Guide*
- *Cisco Fabric Manager Online Help*
- *Cisco Fabric Manager Web Services Online Help*

## 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*
- *Cisco MDS 9000 Family Secure Erase Configuration Guide*
- *Cisco MDS 9000 Family Cookbook for Cisco MDS SAN-OS*

## 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*
- *Cisco MDS 9000 Family Fabric Manager Server Database Schema*

## 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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# CHAPTER 1

## Intelligent Storage Services Overview

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The Cisco MDS 9000 NX-OS software supports intelligent storage services that enable efficient storage area network administration. Intelligent storage services are features that are available on the Storage Services Module (SSM) such as the Small Computer System Interface (SCSI) flow services, SCSI flow statistics, and Fibre Channel Write Acceleration (FC-WA).

These features identify the SCSI I/O flow for a specified initiator-target pair. This information is used by the FC-WA feature to gather advanced I/O statistics for a specified initiator-target pair. The FC-WA feature decreases the latency of an I/O over long distances. The advanced I/O statistics that are collected can be used to evaluate the storage performance for the initiator-target pair.

This chapter includes the following sections:

- [SCSI, page 1-1](#)
- [Fibre Channel Write Acceleration, page 1-2](#)

## SCSI

The Small Computer System Interface (SCSI) feature offers a better utilization of the storage network resources and eliminate the need for separate parallel WAN and MAN infrastructure. Users can connect hosts to storage networks on existing IP networks. Since this feature utilizes the TCP/IP for data transfer, the data is existing IP- based host connections such as Ethernet.

The chapters in this guide describe the following features:

- **SCSI Flow Services**—A SCSI flow service used by a SCSI initiator and a target. The SCSI flow services provide enhanced features for SCSI flows, such as write acceleration and flow monitoring for statistics gathering on an SSM.
- **SCSI Flow Statistics**—These are the statistics that can be collected for any combination of a SCSI initiator and a target. Statistics that be collected include SCSI reads, SCSI writes, SCSI commands, and error statistics.

For information on configuring SCSI flow services and statistics, see [Chapter 2, “Configuring SCSI Flow Services and Statistics.”](#)

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## Fibre Channel Write Acceleration

Fibre Channel Write Acceleration (FC-WA) minimizes application latency or reduces transactions per second over long distances. For synchronous data replication, FC-WA increases the distance of replication or reduces effective latency to improve performance. To take advantage of this feature, both the initiator and target devices must be directly attached to an SSM.

For information on configuring Fibre Channel Write Acceleration, see [Chapter 3, “Configuring Fibre Channel Write Acceleration.”](#)



## CHAPTER 2

# Configuring SCSI Flow Services and Statistics

---

This chapter describes the Intelligent Storage Services features, SCSI flow services, and SCSI flow statistics, which are supported on the Storage Services Module (SSM).

This chapter includes the following sections:

- [SCSI Flow Services, page 2-1](#)
- [SCSI Flow Statistics, page 2-6](#)
- [Default Settings, page 2-8](#)

## SCSI Flow Services

An SCSI initiator and target combination is an SCSI flow. SCSI flow services provide enhanced features for SCSI flows, such as write acceleration and flow monitoring for statistics obtained on an SSM.

This section includes the following topics:

- [About SCSI Flow Services, page 2-1](#)
- [SCSI Flow Services Configuration, page 2-3](#)
- [Enabling Intelligent Storage Services, page 2-3](#)
- [Disabling Intelligent Storage Services, page 2-6](#)

## About SCSI Flow Services

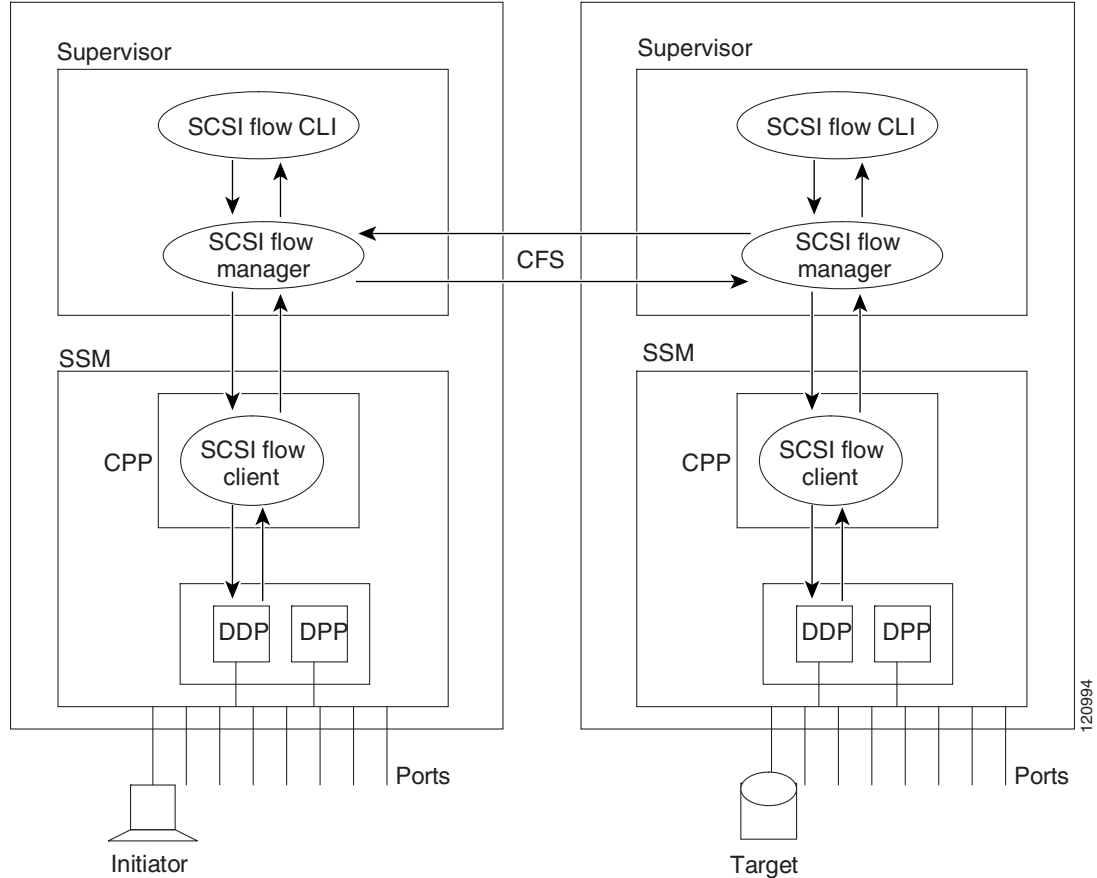
The SCSI flow services functional architecture consists of the following components:

- SCSI flow manager (SFM) on the supervisor
- SCSI flow configuration CLI on the supervisor
- SCSI flow configuration client on the Control Path Processor (CPP) of an SSM
- SCSI flow feature set support on the Data Path Processor (DPP) of an SSM

[Figure 2-1](#) shows an example of the SCSI flow services functional architecture.

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Figure 2-1 SCSI Flow Services Functional Architecture



**Note** The SCSI target and initiator must be connected to different SSMs on different switches.



**Note** For statistics monitoring, the target device is not required to be connected to an SSM.

## SCSI Flow Manager

The SCSI flow manager (SFM) resides on a supervisor module and handles the configuration of SCSI flows, validating them and relaying configuration information to the appropriate SSM. It also handles any dynamic changes to the status of the SCSI flow due to external events. The SFM registers events resulting from operations, such as port up or down, VSAN suspension, and zoning that affects the SCSI flow status, and updates the flow status and configuration accordingly.

The SFM on the initiator communicates to its peer on the target side using Cisco Fabric Services (CFS). Peer communication allows the initiator SFM to validate target parameters and program information on the target side.



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## SCSI Flow Configuration Client

A SCSI flow configuration client (SFCC) resides on the CPP of the SSM. It receives flow configuration requests from the SFM, programs the DPP corresponding to the initiator and target port interfaces, and responds to the SFM with the status of the configuration request.

## SCSI Flow Data Path Support

The DPP on the SSM examines all the messages between the initiator and target and provides SCSI flow features such as Fibre Channel write acceleration and statistics monitoring.

## SCSI Flow Services Configuration

A SCSI flow specification consists of the following attributes:

- SCSI flow identifier
- VSAN identifier
- SCSI initiator port WWN
- SCSI target port WWN
- Flow feature set consisting of Fibre Channel Write Acceleration and statistics monitoring.

The SCSI flow specification is a distributed configuration because the SCSI initiator and the target might be physically connected to SSMs on two different switches located across the fabric. The configuration does not require information to identify either the switch name or the SSM slot location for either the initiator or the target. The manual SCSI flow configuration is performed only at the initiator side. This simplifies the configuration process. The initiator switch sends the configuration to the SFM on the target switch using CFS. No SCSI flow configuration is necessary on the target switch.

## Enabling Intelligent Storage Services

You can enable SCSI flow services either on the entire SSM or on groups of four interfaces.

Enabling SCSI flow services on interfaces has the following restrictions:

- The fewest number of interfaces that you can enable is four. You can specify fc1 through fc4, but not fc1 through fc2.
- The first interface in the group must be 1, 5, 9, 13, 17, 21, 25, or 29. You can specify fc5 through fc8, but not fc7 through fc10.
- The groups of four interfaces do not need to be consecutive. You can specify fc1 through fc8 and fc17 through fc20.



### Note

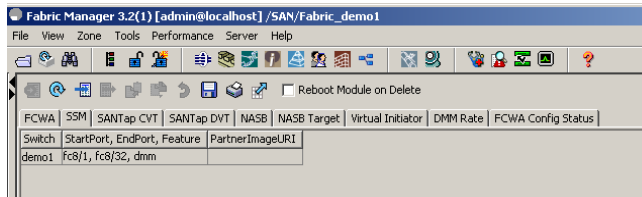
Fibre Channel Write Acceleration can only be provisioned on the entire SSM, not a group of interfaces on the SSM.

To enable Intelligent Storage Services for an SSM and provision all ports or a group of ports to use these services using Fabric Manager, follow these steps:

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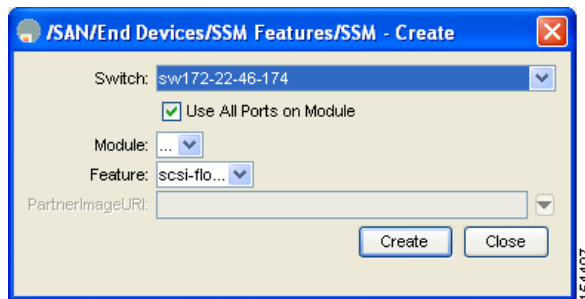
- Step 1** Expand **End Devices** and then select **SSM Features** in the Physical Attributes pane.  
You see the Intelligent Storage Services configuration in the Information pane.
- Step 2** Click the **SSM** tab.  
You see the set of configured services in the Information pane shown in [Figure 2-2](#).

**Figure 2-2 SSM Tab**



- Step 3** Click **Create Row** to enable a new service on an SSM.  
You see the Create SSM dialog box shown in [Figure 2-3](#).

**Figure 2-3 Create SSM Dialog Box**



- Step 4** Select the switch and SSM card you want to configure.
- Step 5** (Optional) Uncheck the **Use All Ports on Module** check box if you want to provision a subset of the ports on the card to use this service.
- Step 6** Select the port range you want to provision for using this service (starting port and ending port).



**Note** The port range must be a multiple of four (for example fc4/1 through fc4-12).

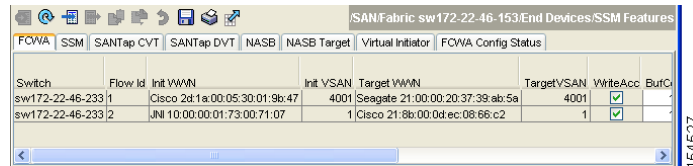
- Step 7** Select the feature you want to enable on these ports from the drop-down list of services.
- Step 8** Set the PartnerImageURI field if you are enabling a third-party application that requires an image loaded onto the SSM.
- Step 9** Click **Create** to create this row and enable this service.

To configure a Fibre Channel using Fabric Manager, follow these steps:

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- Step 1** Expand **End Devices** and then select **SSM Features** in the Physical Attributes pane.  
You see the Intelligent Storage Services configuration, showing the FCWA tab in the Information pane shown in [Figure 2-4](#).

**Figure 2-4 FCWA Tab**

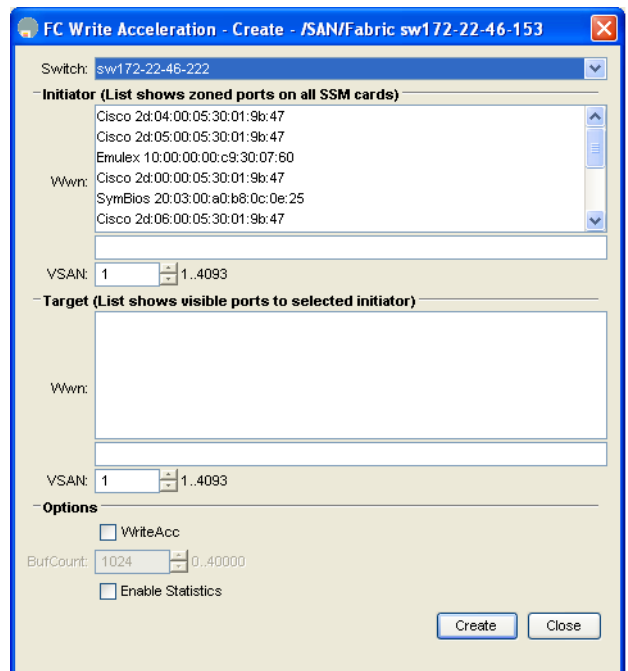


Switch	Flow Id	Init WWN	Init VSAN	Target WWN	Target VSAN	WriteAcc	BufCo
sw172-22-46-233	1	Cisco 2d:1a:00:05:30:01:9b:47	4001	Seagate 21:00:00:20:37:39:ab:5a	4001	<input checked="" type="checkbox"/>	
sw172-22-46-233	2	JMI 10:00:00:01:73:00:71:07	1	Cisco 21:8b:00:0d:ec:08:66:c2	1	<input checked="" type="checkbox"/>	

- Step 2** Click **Create Row** in the Information pane to create a SCSI flow or click a row in the FCWA table to modify an existing SCSI flow.

You see the FC Write Acceleration dialog box shown in [Figure 2-5](#).

**Figure 2-5 FC Write Acceleration Dialog Box**



FC Write Acceleration - Create - /SAN/Fabric sw172-22-46-153

Switch: sw172-22-46-222

**Initiator (List shows zoned ports on all SSM cards)**

- Cisco 2d:04:00:05:30:01:9b:47
- Cisco 2d:05:00:05:30:01:9b:47
- Emulex 10:00:00:00:c9:30:07:60

Wwn:

- Cisco 2d:00:00:05:30:01:9b:47
- SymBios 20:03:00:a0:b8:0c:0e:25
- Cisco 2d:06:00:05:30:01:9b:47

VSAN: 1 1.4093

**Target (List shows visible ports to selected initiator)**

Wwn:

VSAN: 1 1.4093

**Options**

WriteAcc

BufCount: 1024 0.40000

Enable Statistics

Create Close

- Step 3** Select the initiator and target WWNs and VSAN IDs and check the **WriteAcc** check box to enable Fibre Channel write acceleration on this SCSI flow.
- Step 4** (Optional) Enable SCSI flow statistics on this SCSI flow by checking the **Enable Statistics** check box.
- Step 5** (Optional) Change the BufCount value to set the number of 2K buffers used by the SCSI target.
- Step 6** Click **Create** to create this SCSI flow.

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## Disabling Intelligent Storage Services

To disable Intelligent Storage Services in Fabric Manager for an SSM and free up a group of ports that used these services, follow these steps:

- 
- Step 1** Expand **End Devices** and then select **SSM Features** in the Physical Attributes pane. You see the Intelligent Storage Services configuration in the Information pane.
- Step 2** Click the **SSM** tab. You see the set of configured services in the Information pane shown in [Figure 2-2](#).
- Step 3** Select the row in the table that you want to disable.
- Step 4** (Optional) Check the **Reboot Module on Delete** check box if you want to force the card to reboot after disabling the service. This is equivalent to the CLI **force** option.
- Step 5** Click **Delete Row**. The ports that were provisioned for this service become available for provisioning in another service.




---

**Note** If **Reboot Module on Delete** was checked, then the SSM module reboots.

---

## SCSI Flow Statistics

This section includes the following topics:

- [About SCSI Flow Statistics, page 2-6](#)
- [Configuring SCSI Flow Statistics, page 2-7](#)

## About SCSI Flow Statistics

The statistics that can be collected for SCSI flows include the following:

- SCSI reads
  - Number of I/Os
  - Number of I/O blocks
  - Maximum I/O blocks
  - Minimum I/O response time
  - Maximum I/O response time
- SCSI writes
  - Number of I/Os
  - Number of I/O blocks
  - Maximum I/O blocks
  - Minimum I/O response time

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- Maximum I/O response time
- Other SCSI commands (not read or write)
  - Test unit ready
  - Report LUN
  - Inquiry
  - Read capacity
  - Mode sense
  - Request sense
- Errors
  - Number of timeouts
  - Number of I/O failures
  - Number of various SCSI status events
  - Number of various SCSI sense key errors or events

To take advantage of this feature, only the initiator must be directly attached to an SSM.

**Note**

The SCSI flow statistics feature requires the Enterprise Package license installed only on the initiator switches.

**Note**

For SCSI flow statistics, the initiator must connect to an SSM on a Cisco MDS switch while the target can connect to any other switch in the fabric. The SCSI flow initiator and target cannot connect to the same switch.

## Configuring SCSI Flow Statistics

This section includes the following topics:

- [Enabling SCSI Flow Statistics, page 2-7](#)
- [Clearing SCSI Flow Statistics, page 2-8](#)

### Enabling SCSI Flow Statistics

To enable SCSI flow statistics monitoring using Fabric Manager, follow these steps:

- Step 1** Expand **End Devices** and then select **SSM Features** in the Physical Attributes pane.  
You see the FCWA tab in the Information pane.
- Step 2** Click **Create Row** in the Information pane to create a SCSI flow or click a row in the FCWA table to modify an existing SCSI flow.  
You see the FC Write Acceleration dialog box shown in [Figure 2-5](#).
- Step 3** Select the initiator and target WWNs and VSAN IDs and check the **Enable Statistics** check box to enable SCSI flow statistics on this SCSI flow.

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- Step 4** (Optional) Enable Fibre Channel write acceleration on this SCSI flow at this time by checking the **WriteAcc** check box.
- Step 5** Click **Create** to create this SCSI flow.
- 

## Clearing SCSI Flow Statistics

To clear SCSI flow statistics using Fabric Manager, follow these steps:

---

- Step 1** Expand **End Devices** and then select **SSM Features**.
- Step 2** Check the **Stats Clear** check box to clear SCSI flow statistics.
- Step 3** Click the **Apply Changes** icon to clear the SCSI flow statistics.
- 

## Default Settings

[Table 2-1](#) lists the default settings for SCSI flow services and SCSI flow statistics parameters.

**Table 2-1** *Default Intelligent Storage Services Parameters*

Parameters	Default
SCSI flow services	Disabled
SCSI flow services distribution	Enabled
SCSI flow statistics	Disabled



## CHAPTER 3

# Configuring Fibre Channel Write Acceleration

---

This chapter describes the Fibre Channel Write Acceleration(FC-WA) feature, including how to enable the feature on Cisco NX-OS.

This chapter includes the following sections:

- [About Fibre Channel Write Acceleration, page 3-1](#)
- [Default Settings, page 3-3](#)

## About Fibre Channel Write Acceleration

Fibre Channel Write Acceleration minimizes application latency or reduces transactions per second over long distances. For synchronous data replication, Fibre Channel Write Acceleration increases the distance of replication or reduces effective latency to improve performance. To take advantage of this feature, both the initiator and target devices must be directly attached to an SSM.

The Fibre Channel Write Acceleration feature also allows the configuration of the buffer count. You can change the number of 2-KB buffers reserved on the target side DPP for a SCSI flow.

You can estimate the number of buffers to configure using the following formula:

(Number of concurrent SCSI writes \* size of SCSI writes in bytes) / FCP data frame size in bytes

For example, HDS TrueCopy between HDS 9970s uses 1-KB FCP data frames. You perform an initial synchronization for a 16-LUN TrueCopy group with 15 tracks, or 768-KB per LUN, which requires approximately  $16*(768*1024)/1024$  or 12248 write buffers.



### Note

---

The Fibre Channel write acceleration feature requires the Enterprise Package license installed on both the initiator and target switches.

---



### Note

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The initiator and target cannot connect to the same Cisco MDS switch. Fibre Channel write acceleration requires that the initiator and target must each connect to an SSM module installed on different Cisco MDS switches.

---

This section includes the following topics:

- [About Fibre Channel Write Acceleration, page 3-1](#)
- [Enabling Fibre Channel Write Acceleration, page 3-2](#)

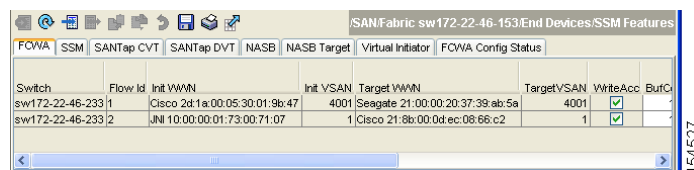
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## Enabling Fibre Channel Write Acceleration

To enable Fibre Channel write acceleration, and optionally modify the number of write acceleration buffers with Fabric Manager, follow these steps:

- Step 1** Expand **End Devices** and then select **SSM Features** from the Physical Attributes pane. You see the Intelligent Storage Services configuration, showing the FCWA tab in the Information pane (see [Figure 3-1](#)).

**Figure 3-1** FCWA Tab

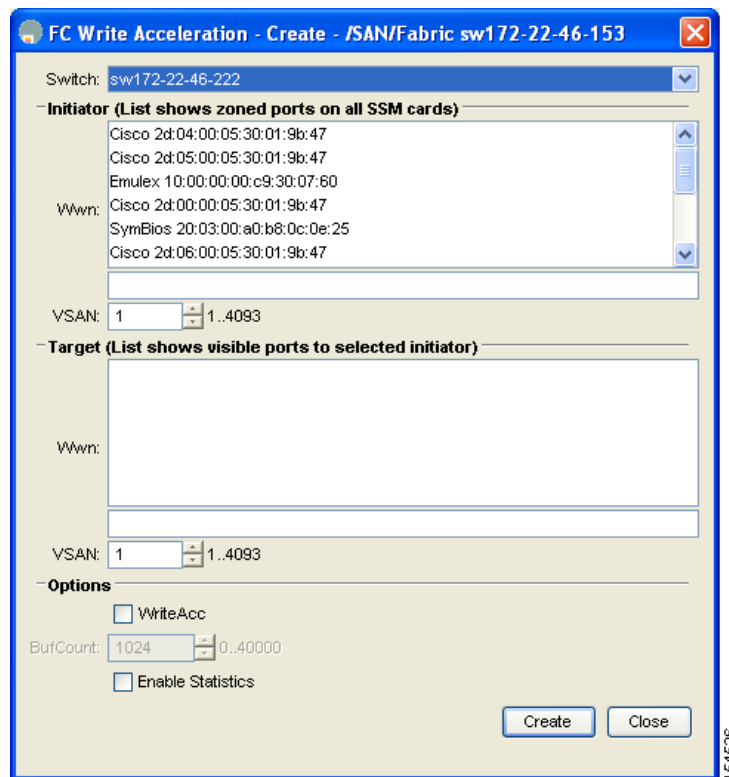


Switch	Flow Id	Init WWN	Init VSAN	Target WWN	Target VSAN	WriteAcc	BufC
sw172-22-46-233	1	Cisco 2d:1a:00:05:30:01:9b:47	4001	Seagate 21:00:00:20:37:39:ab:5a	4001	<input checked="" type="checkbox"/>	
sw172-22-46-233	2	UNI 10:00:00:01:73:00:71:07	1	Cisco 21:8b:00:0d:ec:08:66:c2	1	<input checked="" type="checkbox"/>	

- Step 2** Click **Create Row** in the Information pane to create a SCSI flow or click a row in the FCWA table to modify an existing SCSI flow.

You see the FC Write Acceleration dialog box shown in [Figure 3-2](#).

**Figure 3-2** FC Write Acceleration Dialog Box



FC Write Acceleration - Create - /SAN/Fabric sw172-22-46-153

Switch: sw172-22-46-222

**Initiator (List shows zoned ports on all SSM cards)**

Cisco 2d:04:00:05:30:01:9b:47  
 Cisco 2d:05:00:05:30:01:9b:47  
 Emulex 10:00:00:00:c9:30:07:60  
 Wwn: Cisco 2d:00:00:05:30:01:9b:47  
 SymBios 20:03:00:a0:b8:0c:0e:25  
 Cisco 2d:06:00:05:30:01:9b:47

VSAN: 1 1..4093

**Target (List shows visible ports to selected initiator)**

Wwn:

VSAN: 1 1..4093

**Options**

WriteAcc  
 BufCount: 1024 0..40000  
 Enable Statistics

Create Close

- Step 3** Select the initiator and target WWNs and VSAN IDs and check the **WriteAcc** check box to enable Fibre Channel write acceleration on this SCSI flow.



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- Step 4** (Optional) Enable SCSI flow statistics on this SCSI flow at this time by checking the **Enable Statistics** check box.
- Step 5** (Optional) Set the BufCount value to the number of 2K buffers used by the SCSI target.
- Step 6** Click **Create** to create this SCSI flow with Fibre Channel write acceleration.
- 

## Default Settings

Table 3-1 lists the default settings for Fibre Channel write acceleration parameters.

**Table 3-1** *Default Fibre Channel Write Acceleration Parameters*

Parameters	Default
Fibre Channel write acceleration	Disabled
Fibre Channel write acceleration buffers	1024

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