



Configuring Fibre Channel Write Acceleration

The Storage Services Module (SSM) supports Fibre Channel write acceleration on Cisco MDS 9000 Family switches running Cisco MDS SAN-OS Release 2.0(2b) and later or Cisco NX-OS 4.1(3).

This chapter includes the following sections:

- [Fibre Channel Write Acceleration, page 49-1](#)
- [Displaying Fibre Channel Write Acceleration Information, page 49-2](#)
- [Default Settings, page 49-4](#)

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.

This section includes the following topics:

- [About Fibre Channel Write Acceleration, page 49-1](#)
- [Enabling Fibre Channel Write Acceleration, page 49-2](#)

About Fibre Channel Write Acceleration

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:

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

For example, HDS TrueCopy between HDS 9970s uses 1-KB FCP data frames. You perform an initial sync for a 16-LUN TrueCopy group with 15 tracks, or 768-KB per LUN, 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.

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**Note**

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.

Enabling Fibre Channel Write Acceleration

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

| | Command | Purpose |
|--------|--|--|
| Step 1 | switch# config t switch(config)# | Enters configuration mode. |
| Step 2 | switch(config)# ssm enable feature scsi-flow module 2 | Enables SCSI flow services on the SSM in slot 2. Note Fibre Channel write acceleration can only be configured on all interfaces on the SSM, not on groups of interfaces. |
| Step 3 | switch(config)# scsi-flow flow-id 3 initiator-vsan 2 initiator-pwwn 21:00:00:e0:8b:07:5f:aa target-vsan 4 target-pwwn 2a:20:00:05:30:00:77:e0 | Configures SCSI flow identifier 3 using the pWWNs of the initiator and the target. The flow identifier range is 1 to 65535. |
| Step 4 | switch(config)# scsi-flow distribute | Enables CFS distribution for the SCSI flow. Note No CFS configuration commit operation is required for SCSI flow. The SCSI flow manager uses CFS for target validation. |
| Step 5 | switch(config)# scsi-flow flow-id 3 write-acceleration | Enables Fibre Channel write acceleration for SCSI flow identifier 3. |
| | switch(config)# no scsi-flow flow-id 3 write-acceleration | Disables SCSI flow write acceleration for SCSI flow identifier 3. The default is disabled. |
| Step 6 | switch(config)# scsi-flow flow-id 3 write-acceleration buffer 2048 | Enables Fibre Channel write acceleration for SCSI flow identifier 3 and sets the number of buffers to 2048. The range is 1 to 40000. |
| | switch(config)# no scsi-flow flow-id 3 write-acceleration buffer 1024 | Reverts to the default number of write acceleration buffers. The default is 1024. |

Displaying Fibre Channel Write Acceleration Information

Use the **show scsi-flow** command to display information about the status of the Fibre Channel write acceleration configuration (see [Example 49-1](#) and [Example 49-2](#)).

Example 49-1 Displays Fibre Channel Write Acceleration Configuration for All SCSI Flow Identifiers

```
switch# show scsi-flow
Flow Id: 3
  Initiator VSAN: 101
  Initiator WWN: 21:00:00:e0:8b:05:76:28
  Target VSAN: 102
  Target WWN: 21:00:00:20:37:38:7f:7d
```

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```

Target LUN: ALL LUNs
Flow Verification Status:
-----
    Initiator Verification Status:    success
    Target Verification Status:      success
    Initiator Linecard Status:       success
    Target Linecard Status:          success
Feature Status:
-----
Write-Acceleration enabled
Write-Acceleration Buffers: 1024
Configuration Status: success
Statistics enabled
Configuration Status: success

```

```

Flow Id: 4
Initiator VSAN: 101
Initiator WWN: 21:00:00:e0:8b:05:76:28
Target VSAN: 102
Target WWN: 21:00:00:20:37:38:a7:89
Target LUN: ALL LUNs
Flow Verification Status:
-----
    Initiator Verification Status:    success
    Target Verification Status:      success
    Initiator Linecard Status:       success
    Target Linecard Status:          success
Feature Status:
-----
Write-Acceleration enabled
Write-Acceleration Buffers: 1024
Configuration Status: success
Statistics enabled
Configuration Status: success

```

Example 49-2 Displays Fibre Channel Write Acceleration Configuration for a Specific SCSI Flow Identifier

```

switch# show scsi-flow flow-id 3
Flow Id: 3
Initiator VSAN: 101
Initiator WWN: 21:00:00:e0:8b:05:76:28
Target VSAN: 102
Target WWN: 21:00:00:20:37:38:7f:7d
Target LUN: ALL LUNs
Flow Verification Status:
-----
    Initiator Verification Status:    success
    Target Verification Status:      success
    Initiator Linecard Status:       success
    Target Linecard Status:          success
Feature Status:
-----
Write-Acceleration enabled
Write-Acceleration Buffers: 1024
Configuration Status: success
Statistics enabled
Configuration Status: success

```

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Default Settings

Table 49-1 lists the default settings for Fibre Channel write acceleration parameters.

Table 49-1 Default Fibre Channel Write Acceleration Parameters

| Parameters | Default |
|--|-----------|
| Fibre Channel write acceleration | Disabled. |
| Fibre Channel write acceleration buffers | 1024. |