



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.

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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. With this feature you can also configure the buffer count and change the number of 2-KB buffers reserved on the target side DPP for a SCSI flow.

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:

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

For example, HDS TrueCopy between HDS 9970s uses 1-KB FCP data frames. You perform an initial 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

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.



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 3-1](#) and [Example 3-2](#)).

Example 3-1 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
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 3-2 *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

```

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