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

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:

(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.

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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

SUMMARY STEPS

1. switch# **config t**
2. switch(config)# **ssm enable feature scsi-flow module 2**
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**
4. switch(config)# **scsi-flow distribute**
5. switch(config)# **scsi-flow flow-id 3 write-acceleration**
6. switch(config)# **no scsi-flow flow-id 3 write-acceleration**
7. switch(config)# **scsi-flow flow-id 3 write-acceleration buffer 2048**
8. switch(config)# **no scsi-flow flow-id 3 write-acceleration buffer 1024**

DETAILED STEPS

	Command or Action	Purpose
Step 1	switch# **config t** **Example:** `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.
Step 6	switch(config)# **no scsi-flow flow-id 3 write-acceleration**	Disables SCSI flow write acceleration for SCSI flow identifier 3. The default is disabled.

	Command or Action	Purpose
Step 7	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.
Step 8	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.

The following example 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
```

The following example 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 1: Default Fibre Channel Write Acceleration Parameters , on page 4 lists the default settings for Fibre Channel write acceleration parameters.

Table 1: Default Fibre Channel Write Acceleration Parameters

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