



InfiniBand Commands

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ib sm db-sync

To synchronize the databases of the master subnet manager and one or more standby (slave) subnet managers, enter the **ib sm db-sync** command in Global Configuration mode. To disable database synchronization features, use the **no** form of this command.



Note

With database sync enabled on all chassis, only the chassis running the master SM will accept partition configuration from the user.

```
ib sm db-sync subnet-prefix prefix { enable | max-backup-sms max | session-timeout
timeout | poll-interval interval | cold-sync-timeout cs-timeout | cold-sync-limit cs-limit |
cold-sync-period cs-period | new-session-delay delay | resync-interval resync }
```

```
no ib sm db-sync subnet-prefix prefix { enable | max-backup-sms | session-timeout |
poll-interval | cold-sync-timeout | cold-sync-limit | cold-sync-period |
new-session-delay | resync-interval }
```

Syntax Description

enable	Enables database synchronization on your IB fabric.
max-backup-sms	Specifies the maximum number of backup subnet managers that will synchronize with the master SM.
	Note Although we offer this configuration option, the master SM currently only supports one standby.
<i>max</i>	Maximum number of backup subnet managers that will synchronize with the master SM. This value defaults to 1.
session-timeout	Specifies the interval, in seconds, during which a synchronization session status MAD packet must arrive at the master SM to maintain synchronization.
<i>timeout</i>	Timeout interval, in seconds. This value defaults to 10 seconds.
poll-interval	Interval at which the master SM polls an active slave SM to verify synchronization.
<i>interval</i>	Poll interval, in seconds. This value defaults to 3 seconds.
cold-sync-timeout	Allots a maximum amount of time in which to perform a cold sync. During the cold sync, the master SM copies all out-of-sync tables to the standby.
<i>cs-timeout</i>	Cold sync interval, in seconds. This value defaults to 10 seconds.
cold-sync-limit	Specifies the maximum number of cold syncs that may take place during the cold sync period. This value defaults to 2.
<i>cs-limit</i>	Maximum number of cold syncs per cold sync period (integer).
cold-sync-period	Specifies the length of the interval during which cold syncs may occur.
<i>cs-period</i>	Duration, in seconds, of the cold sync period. This value defaults to 900 seconds.
new-session-delay	Specifies the amount of time that the master SM waits before it attempts to initiate a synchronization session with a new SM.
<i>delay</i>	Delay length, in seconds. This value defaults to 120 seconds.

resync-interval	Specifies the interval at which the master SM sends a resynchronization request to all active sync sessions.
<i>resync</i>	Resynchronization interval, in seconds. This value defaults to 3600 seconds.

Defaults

Databases synchronize by default. Use the **disable** keyword to prevent synchronizing SM databases. For attribute-specific defaults, refer to the Syntax Description.

Command Modes

Global Configuration (config) mode.

Usage Guidelines**Platform Availability:**

Cisco SFS 3001, Cisco SFS 7000, Cisco SFS 7008, Cisco SFS 3012, IB Server Switch Module

Privilege Level:

InfiniBand read-write access

Synchronize the database of the master subnet manager with one or more standby subnet managers to retain all database information in the event of a failover.

**Note**

If you make configuration changes to the master SM and then save the configuration, verify that the master and backup have synchronized, then save the configuration on the backup as well.

Examples

The following example enables database synchronization on the IB fabric.

```
SFS-7000P(config)# ib sm db-sync subnet-prefix fe:80:00:00:00:00:00 enable
```

Related Commands

[show ib sm db-sync](#)

ib pm

To configure performance monitoring, enter the **ib pm** command in Global Configuration mode.

```
ib pm subnet-prefix prefix { connection { monitor | reset-counter | test } src-lid source-LID
dst-lid destination-LID | polling-period seconds | port { counter | monitor node-guid
GUID port-num num | reset-counter [node-guid GUID [port-num num]] } | start-delay
delay | state { disable | enable | enable-topspin-switches | enable-all } | threshold
{ excess-buf-overruns | link-downs | link-recovery-errors | local-link-errors |
rcv-constrnt-errors | rcv-errors | rcv-rate | rcv-rem-phy-errors |
rcv-sw-relay-errors | symbol-errors | v15-dropped | xmit-constrnt-errors |
xmit-discards | xmit-rate } int }
```

Syntax Description

subnet-prefix	Specifies the subnet prefix of the IB subnet on which you want to configure performance monitoring.
<i>prefix</i>	Subnet prefix of the IB subnet on which you want to configure performance monitoring
connection	Specifies a connection-level action. Designates a connection that you want to monitor, reset, or test. You specify the connection with the src-lid and dst-lid arguments.
monitor	Enables monitoring.
reset-counter	Resets the performance monitoring counter(s).
test	Starts a connection test.
src-lid	Specifies the source Local Identifier (LID) of the connection.
<i>source-LID</i>	Source Local Identifier (LID) of the connection.
dst-lid	Specifies the destination Local Identifier (LID) of the connection.
<i>destination-LID</i>	Destination Local Identifier (LID) of the connection.
polling-period	Specifies the interval at which monitoring polls occur.
<i>seconds</i>	Interval at which monitoring polls occur, in seconds.
port	Specifies a port-level action.
counter	Enables the IB PM port counter feature.
node-guid	Specifies the GUID of the node that contains the port that you want to monitor.
<i>GUID</i>	GUID of the node that contains the port that you want to monitor.
port-num	Specifies the port number to monitor.
<i>num</i>	Port number to monitor.
start-delay	Specifies the delay time before starting performance monitoring.
<i>delay</i>	Delay time before starting performance monitoring, in seconds.
state	Configures the state of performance monitoring.
disable	Disables monitoring.
enable	Enables monitoring.
enable-topspin-switches	Enables monitoring on all Server Switches in the subnet.
enable-all	Enables monitoring on all ports in the subnet.
threshold	Configures threshold values.

excess-buf-overruns	Configures the threshold for the number of “excess buffer overrun” errors.
link-downs	Configures the threshold for the number of “link down” errors.
link-recovery-errors	Configures the threshold for the number of “link recovery” errors.
local-link-errors	Configures the threshold for the number of “local link integrity” errors.
rcv-constrnt-errors	Configures the threshold for the number of “receive constraint” errors.
rcv-errors	Configures the threshold for the number of “receive” errors.
rcv-rate	Configures receive rate thresholds.
rcv-rem-phy-errors	Configures the threshold for the number of “receive remote physical” errors.
rcv-sw-relay-errors	Configures the threshold for the number of “receive remote relay” errors.
symbol-errors	Configures the threshold for the number of “symbol” errors.
vl15-dropped	Configures the threshold for the number of “vl15 dropped” events.
xmit-constrnt-errors	Configures the threshold for the number of “transmit constraint” errors.
xmit-discards	Configures the threshold for the number of “transmit discard” errors.
xmit-rate	Configures transmit rate thresholds.
<i>int</i>	Threshold value (integer).

Defaults

Performance monitoring is disabled by default.

Command Modes

Global Configuration (config) mode.

Usage Guidelines**Platform Availability**

Cisco SFS 3001, Cisco SFS 7000, Cisco SFS 7008, Cisco SFS 3012, IB Server Switch Module

Privilege Level:

InfiniBand read-write access

Examples

The following example configures the start-delay.

```
SFS-120(config)# ib pm subnet-prefix fe:80:00:00:00:00:00 start-delay 1
```

Related Commands

[show ib pm config](#)
[show ib pm connection counter](#)
[show ib pm connection counter](#)
[show ib pm port counter](#)
[show ib pm port monitor](#)
[show ib pm threshold](#)

ib pm port counter

To view the performance of IB ports, enter the **ib pm port** command in Global Configuration mode.

ib pm port counter [**reset subnet-prefix** *prefix* [**node-guid** *guid* [**port** *port-number*]]]

Syntax Description		
counter		Enables the IB PM port counter feature.
reset		(Optional) Resets performance counters.
subnet-prefix		(Optional) Specifies the subnet prefix of the subnet of whose port performance you want to view.
<i>prefix</i>		(Optional) Subnet prefix of the subnet of whose port performances you want to view.
node-guid		(Optional) Specifies the GUID of the node whose port performance you want to view.
<i>guid</i>		(Optional) GUID of the node whose port performance you want to view.
port		(Optional) Specifies the port on the node whose performance you want to view.
<i>port-number</i>		(Optional) Port on the node whose performance you want to view.

Defaults Port monitoring does not run by default.

Command Modes Global Configuration (config) mode.

Usage Guidelines

Platform Availability:
Cisco SFS 3001, Cisco SFS 7000, Cisco SFS 7008, Cisco SFS 3012, IB Server Switch Module

Privilege Level:
InfiniBand read-write user.

Related Commands [show ib pm config](#)

ib pm port monitor

To view the performance of IB ports, enter the **ib pm port** command in Global Configuration mode.

```
ib pm port monitor subnet-prefix prefix [node-guid guid port port-number]
[polling-period period] [state { disable | enable | enableAllSwitches |
enableAllSwitchesAndCas }]
```

```
ib pm port monitor threshold subnet-prefix prefix { excess-buf-overflow-errors int |
link-downs int | link-recovery-errors int | local-link-integrity-errors int |
rcv-constraint-errors int | rcv-errors int | rcv-remote-phy-errors int |
rcv-switch-relay-errors int | symbol-errors int | v115-dropped int |
xmit-constraint-errors int | xmit-discards int }
```

Syntax Description

monitor	Enables the IB PM port monitoring feature.
subnet-prefix	Specifies the subnet prefix of the subnet of whose port performance you want to view.
<i>prefix</i>	Subnet prefix of the subnet of whose port performances you want to view.
node-guid	(Optional) Specifies the GUID of the node whose port performance you want to view.
<i>guid</i>	(Optional) GUID of the node whose port performance you want to view.
port	(Optional) Specifies the port on the node whose performance you want to view.
<i>port-number</i>	(Optional) Port on the node whose performance you want to view.
polling-period	(Optional) Configures the polling period of port performance monitoring.
<i>period</i>	(Optional) Polling period (in seconds) of port performance monitoring.
state	(Optional) Specifies a monitoring state.
disable	(Optional) Disables monitoring.
enable	(Optional) Enables monitoring.
enableAllSwitches	(Optional) Enables monitoring on all switches in the subnet.
enableAllSwitchesAndCas	(Optional) Enables monitoring on all switches and channel adapters in the subnet.
threshold	Configures IB PM thresholds.
excess-buf-overflow-errors	Configures the threshold for the number of “excess buffer overrun” errors.
link-downs	Configures the threshold for the number of “link down” errors.
link-recovery-errors	Configures the threshold for the number of “link recovery” errors.
local-link-integrity-errors	Configures the threshold for the number of “local link integrity” errors.
rcv-constraint-errors	Configures the threshold for the number of “receive constraint” errors.
rcv-errors	Configures the threshold for the number of “receive” errors.
rcv-remote-phy-errors	Configures the threshold for the number of “receive remote physical” errors.
rcv-switch-relay-errors	Configures the threshold for the number of “receive remote relay” errors.
symbol-errors	Configures the threshold for the number of “symbol” errors.

vl15-dropped	Configures the threshold for the number of “vl15 dropped” events.
xmit-constraint-errors	Configures the threshold for the number of “transmit constraint” errors.
xmit-discards	Configures the threshold for the number of “transmit discard” errors.
<i>int</i>	Threshold value (integer).

Defaults

Port monitoring does not run by default.

Command Modes

Global Configuration (config) mode.

Usage Guidelines**Platform Availability:**

Cisco SFS 3001, Cisco SFS 7000, Cisco SFS 7008, Cisco SFS 3012, IB Server Switch Module

Privilege Level:

InfiniBand read-write user.

ib sm

To administer the subnet manager (SM) on your Server Switch, and to create and populate partitions, enter the **ib sm** command in Global Configuration mode. To undo configurations and partitions, use the **no** form of this command.

Syntax:

```
ib sm subnet-prefix prefix [multicast {mgid GID-address [mtu MTU-value] [p_key pkey] | [q_key qkey] [rate GBPS] [sl service-level] | ipoib p_key pkey [mtu MTU-value] [q_key qkey] [rate GBPS] [scope {link-local | site-local | org-local | global}}] [sl service-level}] | p_key pkey | priority sm-priority [sm-key key] | response-timeout timeout | sm-key key | sweep-interval interval | lid-mask-control LMC | master-poll-intval mp-interval | master-poll-retries retries | max-active-sms SMs] [ca-link-hoqlife life] [sw-link-hoqlife life] [switch-life-time life] [max-hops 1-64]
```

```
no ib sm subnet-prefix guid [lid-mask-control | master-poll-interval | master-poll-retries | max-active-sms | multicast {ipoib p_key pkey [scope {link-local | site-local | org-local | global}}] | multicast mgid GID-address} | p_key pkey | partition-member member-guid member-port] | priority | response-timeout | sweep-interval]
```

Syntax Description

multicast	Creates a multicast group.
mgid	Specifies the global ID of the multicast group.
<i>GID-address</i>	Global ID of the multicast group.
mtu	(Optional) Specifies the maximum transmission unit of the multicast group.
<i>MTU-value</i>	(Optional) Maximum transmission unit of the multicast group.
q_key	(Optional) Specifies the queue key of the multicast group.
<i>qkey</i>	(Optional) Queue key of the multicast group.
rate	(Optional) Specifies the data rate of the multicast group, in Gbps.
<i>GBPS</i>	(Optional) Data rate of the multicast group, in Gbps.
sl	(Optional) Specifies the service level of the multicast group.
<i>service-level</i>	(Optional) Service level of the multicast group.
ipoib	(Optional) Creates an IPoIB broadcast multicast group.
scope	(Optional) Specifies the scope of the broadcast multicast group.
link-local	(Optional) Applies a link-local scope to the broadcast multicast group.
site-local	(Optional) Applies a site-local scope to the broadcast multicast group.
org-local	(Optional) Applies a org-local scope to the broadcast multicast group.
global	(Optional) Applies a global scope to the broadcast multicast group.
subnet-prefix	Specifies the subnet prefix of the subnet manager.
<i>prefix</i>	Subnet prefix of the subnet manager. You may enter any prefix, but we recommend that you enter fe:80:00:00:00:00:00:00 to indicate a locally administered subnet.

p_key	(Optional) Creates a partition and optionally assigns members to the partition, or assigns a partition key to a multicast group. Note With database sync enabled on all chassis, only the chassis running the master SM will accept partition configuration from the user.
<i>pkey</i>	(Optional) Partition identifier, in <i>##:##</i> format.
priority	(Optional) Assigns a priority level to the subnet manager. Because multiple subnet managers can run on the system and other SMs may run in your IB network, the priority attribute identifies the master SM.
<i>sm-priority</i>	(Optional) Integer value that represents the subnet manager priority level. The higher the integer, the higher the priority.
sm-key	(Optional) Assigns a subnet management key to a new subnet manager. Note We recommend that you do not create additional subnet managers. A subnet manager resides on your Server Switch from the moment you boot.
<i>key</i>	(Optional) 64-bit subnet management key.
response-timeout	(Optional) Specifies the maximum amount of time that the SM waits for a response after it sends a packet to a port. If the SM does not receive a response in time, the SM identifies the port as unresponsive.
<i>timeout</i>	(Optional) Maximum amount of time, in milliseconds, that the SM waits for a response after it sends a packet to a port. The <i>timeout</i> variable defaults to 400 milliseconds.
sweep-interval	(Optional) Specifies how frequently the SM queries the InfiniBand fabric for network changes.
<i>interval</i>	(Optional) Frequency, in seconds, at which the SM queries the InfiniBand fabric for network changes.
lid-mask-control	(Optional) Assigns the number of path bits present in the base LID to each channel adapter port. Increasing the LMC value increases the number of LIDs assigned to each port to increase the number of potential paths to reach each port. This value defaults to 0.
<i>LMC</i>	(Optional) Number of path bits.
master-poll-interval	(Optional) Specifies the interval at which the slave SM polls the master to see if it still runs.
<i>mp-interval</i>	(Optional) Poll interval, in seconds. This value defaults to 3 seconds.
master-poll-retries	(Optional) Specifies the number of unanswered polls that cause the slave to identify the master as dead.
<i>retries</i>	(Optional) Number of unanswered polls (integer). This value defaults to 2.
max-active-sms	(Optional) Specifies the maximum number of standby SMs that the master supports. This value defaults to 0, which indicates unlimited SMs.
<i>SMs</i>	(Optional) Number of standby SMs that the master supports (integer).
switch-life-time	(Optional) Specifies the packet life time inside a Server Switch.
sw-link-hoqlife	(Optional) Specifies the packet life time at the head-of-queue of a switch port.
ca-link-hoqlife	(Optional) Specifies the life time of a packet at the head-of-queue of the host port.
<i>life</i>	(Optional) Life time interval (0 - 20). The interval is a function of microseconds.

max-hops <i>integer</i>	(Optional) Configure maximum length path for SM to examine for routing.
<i>integer</i>	(Optional) Specifies the number of hops. Range is from 0 to 64. Default is 64.

Defaults

Table 4-1 *ib sm subnet-prefix Command Defaults*

Variable	Default
sm-key	00:00:00:00:00:00:00:00
priority	10
sweep-interval	10 seconds
response-timeout	400 microseconds
max-hops	64



Note

You may enter this command without arguments to add a subnet manager with default values.

Command Modes

Global Configuration (config) mode.

Usage Guidelines

Platform Availability:

Cisco SFS 3001, Cisco SFS 7000, Cisco SFS 7008, Cisco SFS 3012, IB Server Switch Module

Privilege Level:

General read-write user.

The subnet manager

- Discovers the subnet topology and dynamically updates it at a specified sweep interval that you specify with the *interval* variable.
- Assigns the local identifiers (LIDs), global identifier (GID) subnet prefix, and partition keys for each HCA port.
- Assigns the LIDs, GID subnet prefix, and forwarding databases for each switch on the subnet.
- Maintains the end-node and service databases of the subnet, providing a GUID to LID/GID resolution service as well as a services directory.

One subnet manager administers the InfiniBand fabric. All InfiniBand hosts run on this one subnet. The subnet manager loads upon bootup.

Each node in the fabric has a subnet management agent (SMA) to shuttle communication requests between the node and the subnet manager. Communication between the subnet manager and the subnet management agent uses the common management datagram (MAD) message structure.

Regarding Partitions:

Partitions are created, and then ports are added to those partitions to enforce isolation.

Examples

The following example defines a subnet manager, or redefines the existing subnet manager, with the specified priority, sm-key, response-timeout, and sweep-interval configurations.

```
SFS-7000P(config)# ib sm subnet-prefix fe:80:00:00:00:00:00 priority 10 sm-key  
00:00:00:00:00:00:00:00 response-timeout 2000 sweep-interval 10
```

The following example removes a specified subnet manager.

```
SFS-7000P(config)# no ib sm subnet-prefix fe:80:00:00:00:00:00:00
```

The following example resets the response-timeout value for the specified subnet manager back to its default value.

```
SFS-7000P(config)# no ib sm subnet-prefix fe:80:00:00:00:00:00:00 response-timeout
```

The following example creates a partition, and adds a member.

```
SFS-7000P(config)# ib sm subnet-prefix fe:80:00:00:00:00:00:00 p_key 00:02  
partition-member 00:00:2c:90:01:1a:c8:00 3 full-member
```

The following example creates a multicast group.

```
SFS-7000P(config)# ib sm subnet-prefix fe:80:00:00:00:00:00:00 multicast mgid  
fe:80:00:00:00:00:00:00:00:00:00:00:00:00:00:00
```

Related Commands

[ib-agent](#)
[show ib sm configuration](#)

ib-agent

To configure subnet management agent (SMA) node strings, enter the **ib-agent** command in Global Configuration mode.

ib-agent { **channel-adapter** *HCA-port-guid* | **switch** *switch-guid* } **node-string** "string"

Syntax Description

channel-adapter	Specifies that you are changing the node string for an HCA.
<i>HCA-port-guid</i>	GUID of the HCA that you want to identify with a node string.
switch	Specifies that you are changing the node string for a switch.
<i>switch-guid</i>	GUID of the switch that you want to identify with a node string.
node-string	Specifies the node string description.
<i>string</i>	Node string description.

Defaults

This command has no default settings.

Command Modes

Global Configuration (config) mode.

Usage Guidelines

Platform Availability:

Cisco SFS 3001, Cisco SFS 7000, Cisco SFS 7008, Cisco SFS 3012, IB Server Switch Module

Privilege Level:

Unrestricted and InfiniBand read-write users.

The "ib-agent" command allows a user to modify the node description string displayed by the "show ib-agent" command. By specifying an IB node (either switch or HCA) inside the switch chassis, and providing a string, the user will override the description string for the given node.



Note

This command does not affect how the node appears on the IB subnet, and the IB "NodeDescription" string is not modified by this command.

Examples

The following example changes the node string of a channel adapter.

```
SFS-7000P(config)# ib-agent channel-adapter 00:05:ad:00:00:00:13:f7 node-string "primary HCA"
```

The following example changes the node string of a switch.

```
SFS-7000P(config)# ib-agent switch 00:05:ad:00:00:00:13:da node-string "Switch 0, LID 2"
```

Related Commands

ib sm
show ib sm configuration
show ib-agent summary