Cisco High-Performance Subnet Manager for InfiniBand Server Switches

Release 1.2
July 2007

Americas Headquarters
Cisco Systems, Inc.
170 West Tasman Drive
San Jose, CA 95134-1706
USA
http://www.cisco.com
Tel: 408 526-4000
800 553-NETS (6387)
Fax: 408 527-0883

Text Part Number: OL-10811-02
Preface vii

Audience vii

Organization vii

Conventions viii

Related Documentation ix

Obtaining Documentation, Obtaining Support, and Security Guidelines ix

CHAPTER 1

Fundamentals of the Cisco High-Performance Subnet Manager 1

Overview 1

Why a High-Performance Subnet Manager? 2

Features 2

Compatibility and Requirements 4

High Availability Compatibility 4

Installing the Cisco High-Performance Subnet Manager 4

Installing the High-Performance Subnet Manager on Cisco InfiniBand Drivers 4

Installing the High-Performance Subnet Manager on OpenFabrics InfiniBand Drivers 5

Using the Cisco High-Performance Subnet Manager 5

Starting the High-Performance Subnet Manager 6

The ib_sm Command 6

Accessing the CLI 9

Editing the Command Line 9

Saving and Restoring the High-Performance Subnet Manager Configuration 11

Known Issues 11

CHAPTER 2

Administrative Commands 1

echo 2

exit 3

help 4

history 5

repeat 6

run 7
## Configure Commands

<table>
<thead>
<tr>
<th>Command</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>config ca-link-hoqlife</td>
<td>3</td>
</tr>
<tr>
<td>config db-sync cold-sync-limit</td>
<td>4</td>
</tr>
<tr>
<td>config db-sync cold-sync-period</td>
<td>5</td>
</tr>
<tr>
<td>config db-sync cold-sync-timeout</td>
<td>6</td>
</tr>
<tr>
<td>config db-sync disable</td>
<td>7</td>
</tr>
<tr>
<td>config db-sync enable</td>
<td>8</td>
</tr>
<tr>
<td>config db-sync max-dbsync-sms</td>
<td>9</td>
</tr>
<tr>
<td>config db-sync new-session-delay</td>
<td>10</td>
</tr>
<tr>
<td>config db-sync poll-interval</td>
<td>11</td>
</tr>
<tr>
<td>config db-sync resync-interval</td>
<td>12</td>
</tr>
<tr>
<td>config db-sync session-timeout</td>
<td>13</td>
</tr>
<tr>
<td>config lmc</td>
<td>14</td>
</tr>
<tr>
<td>config local-node-retries</td>
<td>16</td>
</tr>
<tr>
<td>config mad-retries</td>
<td>17</td>
</tr>
<tr>
<td>config master-poll-interval</td>
<td>18</td>
</tr>
<tr>
<td>config master-poll-retries</td>
<td>19</td>
</tr>
<tr>
<td>config max-active-sms</td>
<td>20</td>
</tr>
<tr>
<td>config max-hops</td>
<td>21</td>
</tr>
<tr>
<td>config max-operational-vl</td>
<td>23</td>
</tr>
<tr>
<td>config multicast-group-ib create</td>
<td>25</td>
</tr>
<tr>
<td>config multicast-group-ib delete</td>
<td>27</td>
</tr>
<tr>
<td>config multicast-group-ipoib create</td>
<td>28</td>
</tr>
<tr>
<td>config multicast-group-ipoib delete</td>
<td>30</td>
</tr>
<tr>
<td>config node-timeout</td>
<td>31</td>
</tr>
<tr>
<td>config partition key</td>
<td>32</td>
</tr>
<tr>
<td>config partition key ipoib</td>
<td>34</td>
</tr>
<tr>
<td>config partition member add</td>
<td>36</td>
</tr>
<tr>
<td>config partition member remove</td>
<td>37</td>
</tr>
<tr>
<td>config partition member type</td>
<td>38</td>
</tr>
<tr>
<td>config pm connection monitor</td>
<td>40</td>
</tr>
<tr>
<td>config pm monitor poll-interval</td>
<td>42</td>
</tr>
<tr>
<td>config pm monitor start-delay</td>
<td>43</td>
</tr>
<tr>
<td>Chapter 4: Performance Management Commands</td>
<td></td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>---</td>
</tr>
<tr>
<td>config pm monitor state</td>
<td>44</td>
</tr>
<tr>
<td>config pm monitored port</td>
<td>45</td>
</tr>
<tr>
<td>config pm port counter access</td>
<td>46</td>
</tr>
<tr>
<td>config pm threshold</td>
<td>47</td>
</tr>
<tr>
<td>config priority</td>
<td>49</td>
</tr>
<tr>
<td>config response-timeout</td>
<td>51</td>
</tr>
<tr>
<td>config route-around chassis</td>
<td>52</td>
</tr>
<tr>
<td>config route-around node</td>
<td>53</td>
</tr>
<tr>
<td>config route-around port</td>
<td>54</td>
</tr>
<tr>
<td>config sa-mad-queue-depth</td>
<td>55</td>
</tr>
<tr>
<td>config sl-vl-mapping oper-vl add</td>
<td>57</td>
</tr>
<tr>
<td>config sl-vl-mapping oper-vl apply</td>
<td>59</td>
</tr>
<tr>
<td>config sl-vl-mapping oper-vl delete</td>
<td>60</td>
</tr>
<tr>
<td>config sm-key</td>
<td>61</td>
</tr>
<tr>
<td>config span</td>
<td>62</td>
</tr>
<tr>
<td>config sweep-interval</td>
<td>63</td>
</tr>
<tr>
<td>config switch-life-time</td>
<td>64</td>
</tr>
<tr>
<td>config sw-link-hoqlife</td>
<td>65</td>
</tr>
<tr>
<td>config trace</td>
<td>67</td>
</tr>
<tr>
<td>config vl-arbitration add</td>
<td>68</td>
</tr>
<tr>
<td>config vl-arbitration apply</td>
<td>70</td>
</tr>
<tr>
<td>config vl-arbitration delete</td>
<td>71</td>
</tr>
<tr>
<td>config wait-report-response</td>
<td>72</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chapter 5: Show Commands</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>show config</td>
<td>3</td>
</tr>
<tr>
<td>show db-sync</td>
<td>4</td>
</tr>
<tr>
<td>show lft</td>
<td>6</td>
</tr>
<tr>
<td>show mft</td>
<td>7</td>
</tr>
<tr>
<td>show multicast</td>
<td>8</td>
</tr>
<tr>
<td>show neighbor</td>
<td>10</td>
</tr>
</tbody>
</table>
show node 12
show other-sm 13
show partition 14
show pm connection counters 16
show pm connection monitors 19
show pm cumulative counters 20
show pm cumulative error counters 22
show pm monitor config 24
show pm monitored ports 25
show pm port counter access 26
show pm port counters 27
show pm threshold 30
show port 31
show route 32
show route-around 34
show service 35
show sl-vl-mapping 36
show sl-vl-mapping-config 37
show span 38
show subscription 39
show switch 40
show version 41
show vl-arbitration 42
show vl-arbitration-config 44
Preface

This document is a guide to the Cisco High-Performance Subnet Manager application (HSM). This guide explains how to use the HSM and includes all HSM commands, categorized command usage type.

Audience

This guide is for administrators who install, configure, and manage Cisco equipment. This document assumes that administrators have prior network administration experience.

Organization

This guide is organized as follows:

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Title</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>Fundamentals of the Cisco High-Performance Subnet Manager</td>
<td>Describes the HSM and explains how to install and use the application.</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>Administrative Commands</td>
<td>Describes the HSM general-use commands.</td>
</tr>
<tr>
<td>Chapter 3</td>
<td>Configure Commands</td>
<td>Describes the HSM configuration commands.</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>Performance Management Commands</td>
<td>Describes the HSM performance monitoring commands.</td>
</tr>
<tr>
<td></td>
<td><strong>Note</strong></td>
<td>Performance Monitoring-related commands appear in the Configure Commands chapter and the Show Commands chapter. For more details, see the Performance Management Commands chapter.</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>Show Commands</td>
<td>Describes the HSM view commands.</td>
</tr>
</tbody>
</table>
## Conventions

This document uses the following conventions:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>boldface font</strong></td>
<td>Commands, command options, and keywords are in <strong>boldface</strong>. Bold text indicates elements or text that you must enter as it appears.</td>
</tr>
<tr>
<td>italic font</td>
<td>Arguments in commands for which you supply values are in <em>italics</em>. Italic font that is not used in commands indicates emphasis.</td>
</tr>
<tr>
<td>Menu1 &gt; Menu2 &gt; Item…</td>
<td>Series indicate a pop-up menu sequence to open a form or execute a desired function.</td>
</tr>
<tr>
<td>[ ]</td>
<td>Elements in square brackets are optional.</td>
</tr>
<tr>
<td>{x</td>
<td>y</td>
</tr>
<tr>
<td>[x</td>
<td>y</td>
</tr>
<tr>
<td>string</td>
<td>A nonquoted set of characters. Do not use quotation marks around the string because the string will include the quotation marks.</td>
</tr>
<tr>
<td>screen font</td>
<td>Terminal sessions and information the system displays are in screen font.</td>
</tr>
<tr>
<td><strong>boldface screen font</strong></td>
<td>Information you must enter is in <strong>boldface screen</strong> font.</td>
</tr>
<tr>
<td>screen font</td>
<td>Arguments for which you supply values are in <em>italic screen</em> font.</td>
</tr>
<tr>
<td>^</td>
<td>The symbol ^ represents the key labeled Control—for example, the key combination ^D in a screen display means hold down the Control key while you press the D key.</td>
</tr>
<tr>
<td>&lt; &gt;</td>
<td>Nonprinting characters, such as passwords are in angle brackets.</td>
</tr>
<tr>
<td>[ ]</td>
<td>Default responses to system prompts are in square brackets.</td>
</tr>
<tr>
<td>!, #</td>
<td>An exclamation point (!) or a pound sign (#) at the beginning of a line of code indicates a comment line.</td>
</tr>
</tbody>
</table>

Notes use the following conventions:

**Note**

Means *reader take note*. Notes contain helpful suggestions or references to material not covered in the manual.
Cautions use the following conventions:

⚠️ **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 SFS product suite includes documentation for Cisco SFS 7000 series switches, Cisco SFS 3000 series switches, and Cisco Host Channel Adapters with host drivers.

To find a document for SFS 7000 series products, use the following URL:


To find a document for SFS 3000 series products, use the following URL:


To find a document for an SFS Host Channel Adapter (HCA) or host driver, use the following URL:


---

**Obtaining Documentation, Obtaining Support, and Security Guidelines**

For information on obtaining documentation, obtaining support, providing documentation feedback, security guidelines, and also recommended aliases and general Cisco documents, see the monthly *What's New in Cisco Product Documentation*, which also lists all new and revised Cisco technical documentation, at:

Fundamentals of the Cisco High-Performance Subnet Manager

This chapter describes the fundamentals of the Cisco High-Performance Subnet Manager (HSM) for InfiniBand server switches. The HSM manages the InfiniBand (IB) subnet from a stand-alone, Linux-based server. The HSM software runs on the server and connects to the IB network through a Host Channel Adapter (HCA). The HSM manages fabrics composed of Cisco Server Fabric Switch (SFS) products, as well as third-party InfiniBand switches. Like the Subnet Manager (SM) embedded on SFS switches, the HSM discovers the InfiniBand fabric, establishes routing, and performs the initial bringup of the fabric. After the initial sweep, the HSM monitors the subnet for network failures, as well as the addition or removal of IB hardware. The HSM complies with the InfiniBand specification revision 1.2, available on the InfiniBand Trade Association (IBTA) website and provides Subnet Administration (SA) services as described therein. Upper-level protocols on the hosts use these services to establish communications, register services, and register for notification of network events.

The terms subnet, fabric, and network are interchangeable in a discussion of InfiniBand.

The terms HSM and SM are used interchangeably in this guide, except in discussion of the embedded Subnet Manager, where only SM applies.

This chapter includes the following sections:

- **Overview**, page 1-1
- **Features**, page 1-2
- **Compatibility and Requirements**, page 1-4
- **Installing the Cisco High-Performance Subnet Manager**, page 1-4
- **Using the Cisco High-Performance Subnet Manager**, page 1-5

**Overview**

Like its embedded counterpart, the HSM reacts to and recovers from failures in the network. It provides a centralized management location that applications and endpoints can query. The HSM manages collections of InfiniBand-compliant hardware organized into an IB subnet. IB network administrators can use the HSM to perform routing calculations, program hardware, bring links active, and perform other management tasks.
Why a High-Performance Subnet Manager?

The High-Performance Subnet Manager scales more effectively than the embedded Subnet Manager and gracefully supports stressful loads. The HSM is a superior management tool for networks of thousands of hosts. Additionally, the HSM is ideally suited to manage IB networks that include third-party switch platforms that do not support the Cisco embedded SM.

Features

The High-Performance Subnet Manager provides features that target heterogeneous fabrics and large or growing fabrics.

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Failover</td>
<td>Administrators can run multiple HSMs on a fabric. The HSM supports the Cisco Subnet Manager Database Synchronization protocol to synchronize with other HSMs. Database Synchronization minimizes disruption when a Subnet Manager fails and another assumes management.</td>
</tr>
<tr>
<td>Performance Monitoring</td>
<td>The HSM includes an integrated performance monitor (PM). The PM feature collects data and provides real-time monitoring of the IB subnet. Users can monitor all ports on the network, specific ports, connections between endpoints, or switches running port_agent software. The port_agent provides a mechanism for the PM feature to distribute the load of monitoring ports in a network. On Cisco-designed switch platforms, the port_agent provides local monitoring of ports so the HSM does not have to query ports individually. The port_agent notifies the HSM when any monitored ports exceed thresholds, so the HSM does not need to poll those ports. The port_agent reduces load, both on the CPU where the HSM runs and on the network, because polling traffic declines greatly. The PM feature gives users the ability to configure error thresholds. When error counts exceed thresholds, the HSM logs the events.</td>
</tr>
<tr>
<td>SPAN</td>
<td>The Switched Port Analyzer (SPAN) feature, also known as port mirroring, on the HSM enables you to mirror packets that ingress a port and route them elsewhere on the network. Mirrored packets can be analyzed to troubleshoot upper-layer protocols and applications.</td>
</tr>
</tbody>
</table>
Table 1-1  High-Performance Subnet Manager Features (continued)

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
</table>
| Multiple SL/VL support to allow for QoS      | The HSM supports the IBA-defined QoS mechanisms and provides the ability to program and administer the SL/VL-related settings of the IB fabric. This optional QoS management capability can be enabled or disabled, depending upon the specific installation requirements. The QoS management feature gives the fabric administrator a high degree of flexibility and allows the administrator of an IB fabric to control these QoS-related settings of an IB subnet:  
  • Number of data VLs configured in the subnet  
  • Profiles of SL-to-VL mapping and VL arbitration tables to be enforced in the subnet |
| Route-around                                 | The HSM allows you to specify IB devices (ports, nodes, or chassis) through which the Subnet Manager should not route traffic. Without disrupting existing network traffic, this route-around feature enables you to avoid forwarding traffic through ports that are starting to accumulate errors or avoid forwarding traffic through chassis that are about to be removed from the IB subnet. |
| Speed                                        | The HSM responds quickly to network events and subnet administration queries. It can discover, route, and bring up an IB subnet containing approximately 4500 compute nodes in under 90 seconds. |
| Command-Line Interface (CLI)                 | We provide a comprehensive CLI to configure and use the HSM. The CLI commands fall into the following categories:  
  • Administrative  
  • Show  
  • Performance Monitoring  
  • Configure  
  Administrative commands execute basic functions. Show commands display both the state of the HSM and details of the network. Performance monitoring commands manage counters. Configure commands specify HSM operating parameters and network properties. |
| Scalability                                  | The HSM can support 4500 compute nodes in production. The HSM is designed to scale to larger fabrics but has not yet been tested in larger configurations. |
| Interoperability                             | The HSM interoperates with all Cisco SFS InfiniBand switches (and related devices), as well as any IB-compliant third-party switches and channel adapters. |
| Runs on the Cisco InfiniBand drivers and the OpenFabrics InfiniBand drivers | The HSM supports two different InfiniBand driver stacks: the Cisco commercial InfiniBand driver stack and the OpenFabrics Enterprise Distribution stack (OFED). |
Compatibility and Requirements

The High-Performance Subnet Manager must run on a Linux host with an installed Cisco HCA. The host can run any Linux distribution and platform supported by the Cisco commercial InfiniBand host driver stack.

All Cisco High-Performance SM features are available regardless of which driver stack the HSM is running. However, for the integrated PM feature to be fully functional when the HSM is running on the OpenFabrics InfiniBand driver stack, all Cisco IB switches in the fabric must be running the latest available SFS OS release: SFS OS 2.8.0 update 2 and later or SFS OS 2.9.0 update 2 and later, depending upon the platform.

If possible, use the HSM with the following hardware recommendations:
- Intel or AMD i386/i686 or x86_64
- 2 GHz CPU
- 1 GB system memory (more for networks with more than 2000 hosts)
- 5 GB available disk space

High Availability Compatibility

Like the embedded SM, the HSM supports failover and high availability. The HSM supports the Cisco SM Database Synchronization protocol to synchronize multiple HSMs on one network.

Note
The HSM will not synchronize with the embedded SM.

Installing the Cisco High-Performance Subnet Manager

The Cisco High-Performance Subnet Manager comes packaged as an RPM. The RPM package contains an SM executable, a CLI interface executable, and a script that can be used to automatically launch the SM at host startup. Two types of RPMs are available for each Linux distribution and platform:
- RPM for the Cisco InfiniBand driver stack
- RPM for the OpenFabrics InfiniBand driver stack

Access the appropriate RPM for the driver stack that you want to install:
- Installing the High-Performance Subnet Manager on Cisco InfiniBand Drivers, page 1-4
- Installing the High-Performance Subnet Manager on OpenFabrics InfiniBand Drivers, page 1-5

Installing the High-Performance Subnet Manager on Cisco InfiniBand Drivers

Note
The HSM RPMs have an explicit dependency on the underlying topspin-ib and topspin-ib-mod RPMs. The topspin-ib-sm RPM will not install without a 3.2.0 version of those RPMs.
To install the HSM on the Cisco InfiniBand drivers, perform the following steps:

**Step 1** Enter the `rpm -qa | grep topspin` command to verify that the Cisco InfiniBand driver stack is installed.

**Step 2** Enter the `rpm -i topspin-ib-sm-rhel4-3-2-0.99.x86_64.rpm` command to install the HSM.

**Step 3** The SM and CLI executables install in this directory: `/usr/local/topspin/sbin`.

**Step 4** The RPM contains a script that can be used to automatically launch the SM at host startup. The script installs in this directory: `/etc/init.d`.

**Step 5** Enable the script by entering the `chkconfig` administrative command.

The “rhel4” in the example command identifies the Red Hat Enterprise Linux version 4. (You should choose the appropriate distribution and platform for performing the installation.) The “3.2.0” identifies the host driver release with which the RPM works. The “99” represents the host-driver build with which the RPM works. The “x86_64” represents the platform type on which the RPM runs.

---

**Installing the High-Performance Subnet Manager on OpenFabrics InfiniBand Drivers**

**Note** The HSM RPMs have an explicit dependency on the underlying kernel-ib RPM. The cisco-ib-sm-ofed RPM will not install without the kernel-ib RPM.

To install the HSM on OpenFabrics InfiniBand drivers, follow these steps:

**Step 1** Enter the `rpm-qa | grep kernel-ib` command to verify that the OpenFabrics InfiniBand driver stack installed.

**Step 2** Enter the `rpm -i cisco-ib-sm-ofed-rhel4-3-2-0.99.x86_64.rpm` command to install the HSM.

**Step 3** The SM and CLI executables install in this directory: `/usr/sbin`.

**Step 4** The RPM contains a script that can be used to automatically launch the SM at host startup. The script install in this directory: `/etc/init.d`.

**Step 5** Enable the script by entering the `chkconfig` administrative command.

The “rhel4” in the example command identifies the Red Hat Enterprise Linux version 4. (You should choose the appropriate distribution and platform for performing the installation.) The “x86_64” represents the platform type on which the RPM runs.

---

**Using the Cisco High-Performance Subnet Manager**

After you install the High-Performance Subnet Manager software, follow the instructions in this section to use the application. A complete list of commands appears in subsequent chapters.
Starting the High-Performance Subnet Manager

To launch the application, log in to your host by performing the following command:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: /etc/init.d/ib_sm start</td>
<td>Launches the application.</td>
</tr>
</tbody>
</table>

**Note**
To stop the High Performance Subnet Manager application, enter the `shutdown` command at the CLI prompt or execute the `/etc/init.d/ib_sm stop` command on the host.

The `ib_sm` Command

The SM command-line options of the `ib_sm` command can be added to the ib_sm script. The command-line options appear in the output that follows.

Usage: `ib_sm <dev_num> [options]`

- `<dev_num>`
  Specifies the IB device number that SM should be associated with. The device number is platform dependent as shown below:
  - (0..n) for Hosts
  - (0,1,2) for Topspin 90 / SFS 3001
  - (0) for Topspin 360 / SFS 3012
  - (0) for Topspin 120 / SFS 7000
  - (0,1) for Topspin 270 / SFS 7008

- OPTIONS
  - `-D <VAL>`
    - `--dev-name=<VAL>`
      Specifies the IB device name that the SM should be associated with. If this optional argument is specified it overrides the mandatory `<dev_num>` parameter.
  - `-S <VAL>`
    - `--stack=<VAL>`
      Indicates the runtime IB stack SM should expect. SM defaults to 'cisco' stack if this optional argument is omitted. `<VAL>` can either be 'cisco' or 'ofed'.
  - `-m <VAL>`
    - `--run-mode=<VAL>`
      Use this option to specify the SM operating mode. If this option is not provided at SM invocation time, SM starts in automatic mode. Choose one of the following mode values to change the default behavior:
      - VAL     MODE ENABLED
        --     ------------
        i     interactive mode
        a     automatic mode
        s     standalone mode
  - `-p <VAL>`
    - `--port=<VAL>`
This specifies the port on the IB device that SM should be bound to. If this optional argument is not provided, SM attempts to bind to port 1 of the device identified by the mandatory argument <dev_num>.

-s <VAL>
--subnet=<VAL>
  Specifies the 64-bit subnet prefix value.
  If this optional argument is not provided, SM uses the subnet prefix value of fe80000000000000.

-P <VAL>
--priority=<VAL>
  Specifies the priority of the SM in the subnet.
  Priority value must be in the range 0-15, with 15 being the highest priority.
  If this argument is not provided SM priority is set to 10 on embedded platforms and 0 on hosts.

-k <VAL>
--sm-key=<VAL>
  This optional argument specifies the 64-bit SM_Key value.
  By default this value is set to 0000000000000000.

-l <VAL>
--lmc=<VAL>
  Specifies the lmc value for the subnet.
  If this optional argument is not provided, SM uses lmc value of 0.

-H <VAL>
--max-hops=<VAL>
  This optional argument specifies the max hop limit to be considered for calculating IB routes.
  Default value is set to 64.

-d 1|2
--dbsync=1|2
  This argument controls the database synchronization feature state of the SM. By default the db sync feature is enabled for SM running on all embedded platforms and disabled on hosts. Specify 1 for this optional argument in order to enable database synchronization between master and standby SM(s) and 2 to disable it.

-q 1|2
--qos=1|2
  This controls the ability of the SM to manage SL/VL related settings in the subnet. By default the SL/VL mgmt feature is disabled in the SM on all platforms. Specify 1 for this optional argument in order to enable the feature and 2 to disable it.

-O <VAL>
--oper-vl-limit=<VAL>
  This argument specifies the number of data VLs to be permitted in the subnet. By default, the operational VL value of ports of a link is set to the smaller of the two VL capabilities. Choose one of the following values to restrict the range of configured operational VL values in the fabric. Note that -q setting needs to be enabled in order to specify a non-default behavior for this optional argument.
Using the Cisco High-Performance Subnet Manager

### Value        Behavior
------       --------
v10          Allow only VL0
v10-vl1      Allow VL0-VL1
v10-vl3      Allow VL0-VL3
v10-vl7      Allow VL0-VL7
v10-vl14     Allow VL0-VL14
auto-subnet  Limit by the smallest VLCap value detected in the subnet
auto-link    The operational data VLs at a link are to be limited only by the smaller of the VLCap values of its ports

-\textbf{-x} <file-name>
--cmd-file=<file-name>
This optional argument specifies the CLI command file to run at SM startup. The command file is typically used with the host SM, to load user configuration data a.k.a user configuration persistency, during SM initialization. This option is not typically used on embedded platforms since user data persistency is supported via another mechanism, that is transparent to the user, during chassis bringup. This file should contain one or more host SM CLI commands, each command specified on a line by itself. Use this option along with the '-o' option to debug command file syntactic or semantic issues. Full path name of the command file should be provided when using this optional argument.

-\textbf{-o} <file-name>
--cmd-file-rslt=<file-name>
This option specifies the file to which results of the execution of the command file specified via the '-x' option are to be logged. Full path name of the output file should be provided when using this option.

-\textbf{-L} <VAL>
--trace-level=<VAL>
This optional argument controls the verbosity of SM logs directed to syslog. Choose one of the following values to control the verbosity of SM log messages:

<table>
<thead>
<tr>
<th>VAL</th>
<th>LOG VERBOSITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NO_DISPLAY</td>
</tr>
<tr>
<td>1</td>
<td>VERY_TERSE</td>
</tr>
<tr>
<td>2</td>
<td>TERSE</td>
</tr>
<tr>
<td>3</td>
<td>VERBOSE</td>
</tr>
<tr>
<td>4</td>
<td>VERY_VERBOSE</td>
</tr>
<tr>
<td>5</td>
<td>SCREAM</td>
</tr>
</tbody>
</table>

-\textbf{-M} <VAL>
--trace-flow-mask=<VAL>
This option specifies the trace flow mask of SM. By default SM tracing is set to capture informational event flows only(0x1).

-\textbf{-h}
--help
Displays this help message.
Accessing the CLI

You can launch the CLI for an HSM that runs on Cisco IB drivers and for an HSM that runs on OFED drivers.

Cisco IB Drivers
To launch the CLI for the HSM running on Cisco IB drivers, log in to your host, start the HSM if you have not already done so, and perform the following steps:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: cd /usr/local/topspin/sbin</td>
<td>Navigates to the /usr/local/topspin/sbin directory.</td>
</tr>
<tr>
<td>Step 2: ./ib_sm_cli</td>
<td>Launches the CLI.</td>
</tr>
</tbody>
</table>

OFED Drivers
To launch the CLI for the HSM running on OFED drivers, log in to your host, start the HSM if you have not already done so, and perform the following steps:

<table>
<thead>
<tr>
<th>Command</th>
<th>Purpose</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1: cd /usr/sbin</td>
<td>Navigates to the /usr/sbin directory.</td>
</tr>
<tr>
<td>Step 2: ./ib_sm_cli</td>
<td>Launches the CLI.</td>
</tr>
</tbody>
</table>

Note
To end your CLI session, enter the `exit` command at the CLI prompt.

Editing the Command Line

The CLI of the High Performance Subnet Manager supports the following features:

- in-line command editing
- command-history queueing

The in-line command editing feature gives you the opportunity to edit a command that you have typed or reviewed from the history queue. The command-history queue stores the last 100 commands that you entered so that you can quickly and easily review the past commands. For more information about the command-history queueing feature, see the “history” section on page 2-5.

Various keystrokes enable you to edit a command you have just entered and to traverse through the command history. The key strokes appear in Table 1-2:

<table>
<thead>
<tr>
<th>Key Combination</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ctrl-d</td>
<td>Deletes the character at the cursor.</td>
</tr>
<tr>
<td>Ctrl-u</td>
<td>Deletes the line at the cursor.</td>
</tr>
</tbody>
</table>
Alternatively, a previously entered command can be repeated by entering the \!n command, where n is
the nth command in the history.

Command-line editing also allows for pattern substitution in the previously entered command. The
syntax of the command is \^pattern1^pattern2^\^. This combination substitutes pattern1 with pattern2 in
the previous command and executes it if pattern1 exists. Otherwise, the CLI executes the previous
command with no modification. For example, if show node -s was the previous command, entering
\^node^port^\^ would result in the execution of show port -s command.

### Note

You should avoid using the history command when you want to use this feature. Otherwise, history is
the previous command.

Finally, there is another mechanism for modifying previously executed commands. The syntax of this
command is \!n:pattern1|pattern2/. Issuing this command results in executing the nth command in the
history after substituting pattern1 with pattern2.
Saving and Restoring the High-Performance Subnet Manager Configuration

The Cisco High-Performance Subnet Manager does not have a mechanism for saving current configuration settings. However, there are two mechanisms available for a user to start the SM in a given configuration.

The first mechanism is with command-line options. The SM accepts the most commonly set configuration options as command-line parameters, so it is easy to tune SM behavior by editing the /etc/init.d/ib_sm script.

The second mechanism is by creating an HSM CLI “batch file.” This file has an arbitrary set of SM CLI commands to execute at startup. You can test the script using the run CLI command, and when the script is debugged, the user can use the SM command-line interface to have it run the script file at startup. For more information, see run, page 2-7.

**Note** SM will fail to initialize if there are syntactic errors in the startup config file or it does not have appropriate file permissions associated with it.

Known Issues

- The High-Performance Subnet Manager fails to initialize when there is a problem executing the startup cmd-file (such as an invalid file name, bad file permissions, or syntactic errors in the file). Users must search the syslog for error messages.
- Command-line editing syntax is not permitted in cmd-file syntax.
- The exit and shutdown commands, if specified in the startup cmd-file, will prevent HSM from initializing.
- The HSM is not supported by VFrame.
- The HSM will synchronize with other instances of the HSM, but it will not synchronize with a switch-based Subnet Manager because the two products target different market segments and have different capabilities.
CHAPTER 2

Administrative Commands

This chapter includes the following commands:

- echo, page 2-2
- exit, page 2-3
- help, page 2-4
- history, page 2-5
- repeat, page 2-6
- run, page 2-7
- shutdown, page 2-11
echo

To echo the command arguments back to the screen, use the `echo` command.

```
  echo
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command echoes the command arguments back to the screen.

**Examples**

```
ib_sm> echo text
text
ib_sm>
```

**Related Commands**

None.
exit

To disconnect the CLI session, use the `exit` command.

```
exit
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

This command has no default settings.

**Usage Guidelines**

The Subnet Manager permits 3 simultaneous CLI sessions only.

**Note**

This command only ends a CLI session. It does not shut down the Subnet Manager.

**Examples**

```
ib_sm> exit
SM disconnected. Exiting.
[root@ibmg-r2-1850-1 log]#
```

**Related Commands**

shutdown, page 2-11
help

To display the usage for a command, use the help command.

`help [cmd]`

Syntax Description

| cmd | (Optional) Displays the usage of the specified command. |

Defaults

This command has no default settings.

Usage Guidelines

This command displays the usage for all commands or for a specific command if you use the [cmd] option.

Examples

```
ib_sm> help
  ? [cmd] -- Show usage for all commands or a specific command.
  echo [args ...] -- Print arguments on output.
  exit -- Disconnect from the SM.
  shutdown -- Terminate the SM.
  help [cmd] -- Show usage for all commands or a specific command.
  pm -- Control the performance management feature. Type "pm help" for help.
  repeat <count> <command...> -- Repeatedly execute a command.
  show -- Show subnet data. Type "show help" for help.
  config -- Set operating parameters. Type "config help" for help.
  run -- Run cli command file. Type "run help" for help.

ib_sm> help echo
  echo [args ...] -- Print arguments on output.

ib_sm>
```

Related Commands

? , page 2-12
**history**

To view a list of previously-used commands, use the `history` command.

```
history
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

This command has no default settings.

**Usage Guidelines**

The `history` command lists up to 100 previously issued commands. One can traverse through the command history by repeated up/down arrow strokes or Ctrl-p/Ctrl-n keystrokes.

**Examples**

```
ib_sm> history
  1  show service
  2  show subscription
  3  show lft
  4  show mft
  5  show other-sm
  6  show pm port counter access
  7  show pm monitored ports
  8  config pm monitored port add 00:05:ad:00:00:04:e5:64 1
  9  show pm monitored ports
 10  history
```

**Related Commands**

Any command in the “Administrative Commands” chapter, the “Configure Commands” chapter, the “Performance Management Commands” chapter, or the “Show Commands” chapter may appear in this command output.
repeat

To repeatedly execute a user-provided command, use the `repeat` command.

```
repeat count command...
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>count</td>
<td>Specifies the number of times to repeat a command.</td>
</tr>
<tr>
<td>command...</td>
<td>Identifies the specific command to be repeated.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command repeatedly executes the user-provided command.

**Examples**

```
ib_sm> repeat 3 pm reset counters
Counter reset succeeded.
Counter reset succeeded.
Counter reset succeeded.
ib_sm>
```

**Related Commands**

None.
run

To run all commands in a file that contains a line-delineated list of CLI commands, use the run command.

run cmd-file file

Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>cmd-file</td>
<td>Runs the commands in the specified file.</td>
</tr>
<tr>
<td>file</td>
<td>Specifies the name of the file that contains the commands you want to run.</td>
</tr>
</tbody>
</table>

Note

The path to the file must be absolute.

Defaults

This command has no default settings.

Usage Guidelines

This command allows you to specify a file that contains a list of CLI commands. The commands in the file are executed one at a time, just as if you had typed the commands sequentially into the CLI. This command can be used to perform batch operations and to debug a command file before adding it to the default Subnet Manager invocation command.

Examples

[root@ibmg-r2-1850-1 log]# ib_sm_cli
ib_sm> show config

Subnet Manager Configuration

subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 0
sm-key : 00:00:00:00:00:00:00:00
oper-status : master
act-count : 1658
sweep-interval(sec) : 10
response-timeout(msec) : 200
mad-retries : 5
node-timeout : 10
master-poll-interval(sec) : 3
master-poll-retries : 2
max-active-sms : 0
LID-mask-control : 0
switch-life-time : 1820
sw-link-hoqlife : 1820
calink-hoqlife : 1820
max-hops : 64
wait-report-response : false
sa-mad-queue-depth : 256
local-node-retries : 10
qos-admin-state : disabled
max-operational-vl : auto-link
min-vl-cap-detected : vl0-vl17
Chapter 2      Administrative Commands

All Partitions

subnet-prefix : fe:80:00:00:00:00:00:00
p-key : ff:ff
ipoib : enabled

partition-members :
  node-guid : 00:05:ad:00:00:00:12:34
  port-num : 0
  member-type : full
  node-guid : 00:05:ad:00:00:01:60:04
  port-num : 0
  member-type : full
  node-guid : 00:05:ad:00:00:04:e4:4c
  port-num : 1
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:1c
  port-num : 1
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:24
  port-num : 1
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:64
  port-num : 1
  member-type : full

ib_sm> run cmd-file /tmp/sm_commands
ib_sm> config priority 11
ib_sm> config max-hops 5
ib_sm> config trace 2 0x1000
ib_sm> config partition key create 80:80
ib_sm> config db-sync enable
ib_sm> config pm threshold xmit-rate 5
ib_sm> config pm threshold rcv-rate 5
ib_sm> config pm threshold symbol-errors 3
ib_sm> config pm monitor state enabled-cisco-switches
ib_sm> show config

Subnet Manager Configuration

subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:00:00:00
priority : 11
sm-key : 00:00:00:00:00:00:00:00
oper-status : master
act-count : 2722
sweep-interval(sec) : 10
response-timeout(msec) : 200
mad-retries : 5
node-timeout : 10
master-poll-interval (sec) : 3  
master-poll-retries : 2  
max-active-sms : 0  
LID-mask-control : 0  
switch-life-time : 1820  
sw-link-hoqlife : 1820  
ca-link-hoqlife : 1820  
max-hops : 5  
wait-report-response : false  
sa-mad-queue-depth : 256  
local-node-retries : 10  
qos-admin-state : disabled  
max-operational-vl : auto-link  
min-vl-cap-detected : vl10-vl17  

```
ib_sm> show partition
```

```
All Partitions
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00  
p-key : 80:80  
ipoib : enabled
partition-members : 
none

subnet-prefix : fe:80:00:00:00:00:00:00  
p-key : ff:ff  
ipoib : enabled
partition-members :
  node-guid : 00:05:ad:00:00:00:12:34  
  port-num : 0  
  member-type : full
  node-guid : 00:05:ad:00:00:00:01:60:04  
  port-num : 0  
  member-type : full
  node-guid : 00:05:ad:00:00:04:e4:4c  
  port-num : 1  
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:1c  
  port-num : 1  
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:24  
  port-num : 1  
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:64  
  port-num : 1  
  member-type : full

ib_sm> show pm threshold
```

```
PM thresholds
================================================================================
symbol-errors : 3  
link-recovery-errors : none  
link-downs : none  
rcv-errors : none  
rcv-remote-phy-errors : none
```
run

rcv-switch-relay-errors : none
xmit-discards : none
xmit-constraint-errors : none
rcv-constraint-errors : none
local-link-integrity-errors : none
excessive-buf-overrun-errors : none
vl15-dropped : none
xmit-rate : 5 %
rcv-rate : 5 %

**Note**

Notice that the commands shown after the `run cmd-file` command have a blank line between them, indicating that they are being executed from the command file.

**Related Commands**

Any command in the “Administrative Commands” chapter, the “Configure Commands” chapter, the “Performance Management Commands” chapter, or the “Show Commands” chapter can be added to the file and run with the `run` command.
**shutdown**

To shut down the Subnet Manager, use the **shutdown** command.

```
shutdown
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command shuts down the Subnet Manager itself. When invoked, the command requests that the Subnet Manager clean up and exit completely. All CLI sessions will be terminated, and the Subnet Manager process will shut down.

**Note**

This command shuts down the Subnet Manager. It does not merely exit the user interface.

**Examples**

```
ib_sm> shutdown
SM disconnected. Exiting.
[root@ibmg-r2-1850-1 log]# tail /var/log/messages
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [INFO]: Initiating SM main shutdown
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [INFO]: SM event loop terminated
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [ib_pm.c:3300]: Terminating PM event loop
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [ib_sa_admin.c:538]: Terminating SA event loop
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [INFO]: PM event loop terminated
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [ib_sm.c:1010]: Terminating heartbeat event loop
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [INFO]: SA event loop terminated
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [ib_sm_db_sync_session.c:1811]: Terminating DBSync event loop
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [ib_sm_transport.c:904]: Terminating TX event loop
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [INFO]: DBSync event loop terminated
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [INFO]: Heartbeat event loop terminated
May  8 21:14:25 ibmg-r2-1850-1 ib_sm[1137]: [INFO]: TX event loop terminated
```

**Related Commands**

exit, page 2-3
To display the usage for a specific command or for all commands, use the `?` command.

`? [cmd]`

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>cmd</th>
<th>(Optional) Specifies a command.</th>
</tr>
</thead>
</table>

### Defaults

This command has no default settings.

### Usage Guidelines

This command displays the usage for all commands or for a specific command if you use the `[cmd]` option.

### Examples

```
ib.sm> ?
? [cmd] -- Show usage for all commands or a specific command.
   echo [args ...] -- Print arguments on output.
   exit -- Disconnect from the SM.
   shutdown -- Terminate the SM.
   help [cmd] -- Show usage for all commands or a specific command.
   pm -- Control the performance management feature. Type "pm help" for help.
   repeat <count> <command...> -- Repeatedly execute a command.
   show -- Show subnet data. Type "show help" for help.
   config -- Set operating parameters. Type "config help" for help.
   run -- Run cli command file. Type "run help" for help.

ib.sm> ? echo
   echo [args ...] -- Print arguments on output.

ib.sm>
```

### Related Commands

`help, page 2-4`
Configure Commands

This chapter includes the following commands::

- config ca-link-hqflife, page 3-3
- config db-sync cold-sync-limit, page 3-4
- config db-sync cold-sync-timeout, page 3-6
- config db-sync disable, page 3-7
- config db-sync enable, page 3-8
- config db-sync max-dbsync-sms, page 3-9
- config db-sync new-session-delay, page 3-10
- config db-sync poll-interval, page 3-11
- config db-sync resync-interval, page 3-12
- config db-sync session-timeout, page 3-13
- config lmc, page 3-14
- config local-node-retries, page 3-16
- config mad-retries, page 3-17
- config master-poll-interval, page 3-18
- config master-poll-retries, page 3-19
- config max-active-sms, page 3-20
- config max-hops, page 3-21
- config max-operational-vl, page 3-23
- config multicast-group-ib create, page 3-25
- config multicast-group-ib delete, page 3-27
- config multicast-group-ipoib create, page 3-28
- config multicast-group-ipoib delete, page 3-30
- config node-timeout, page 3-31
- config partition key, page 3-32
- config partition key ipoib, page 3-34
- config partition member add, page 3-36
- config partition member remove, page 3-37
• config partition member type, page 3-38
• config pm connection monitor, page 3-40
• config pm monitor poll-interval, page 3-42
• config pm monitor start-delay, page 3-43
• config pm monitor state, page 3-44
• config pm monitored port, page 3-45
• config pm port counter access, page 3-46
• config pm threshold, page 3-47
• config priority, page 3-49
• config response-timeout, page 3-51
• config route-around chassis, page 3-52
• config route-around node, page 3-53
• config route-around port, page 3-54
• config sa-mad-queue-depth, page 3-55
• config sl-vl-mapping oper-vl add, page 3-57
• config sl-vl-mapping oper-vl apply, page 3-59
• config sl-vl-mapping oper-vl delete, page 3-60
• config sm-key, page 3-61
• config span, page 3-62
• config sweep-interval, page 3-63
• config switch-life-time, page 3-64
• config sw-link-hoqlife, page 3-65
• config trace, page 3-67
• config vl-arbitration add, page 3-68
• config vl-arbitration apply, page 3-70
• config vl-arbitration delete, page 3-71
• config wait-report-response, page 3-72
config ca-link-hoqlife

To configure the Head of Queue Lifetime for switch ports that are attached to channel adapters, use the config ca-link-hoqlife command.

config ca-link-hoqlife value

Syntax Description

| value | Specifies the integer value of the Head of Queue Lifetime limit, which is defined as 4.096us * 2^value. This integer value represents the power to which 2 is raised. |

Defaults

This value defaults to 18.

Usage Guidelines

This command configures the HeadOfQueue Lifetime for switch ports that are attached to channel adapters in the network. This value specifies how long a packet will live at the front of a port queue before being discarded. The default value of 18 causes packets to be discarded after approximately one second. The maximum value of 20 is a special value that means packets are never discarded. This lifetime is linked to the sw-link-hoqlife.

Examples

ib_sm> config ca-link-hoqlife 15
ib_sm> show config
================================================================================
Subnet Manager Configuration
================================================================================
    subnet-prefix : fe:80:00:00:00:00:00:00
    guid : 00:05:ad:00:00:04:e5:25
    priority : 12
    sm-key : 00:00:00:00:00:00:ff
    oper-status : master
    act-count : 17975
    sweep-interval(sec) : 15
    response-timeout(msec) : 250
    mad-retries : 7
    node-timeout : 60
    master-poll-interval(sec) : 5
    master-poll-retries : 3
    max-active-smss : 2
    LID-mask-control : 2
    switch-life-time : 15
    sw-link-hoqlife : 15
    ca-link-hoqlife : 15
    max-hops : 5
    wait-report-response : true
    sa-mad-queue-depth : 512
    local-node-retries : 20
    qos-admin-state : enabled
    max-operational-vl : auto-subnet
    min-vl-cap-detected : vl0-vl7

Related Commands

show config, page 5-3
config db-sync cold-sync-limit

To configure the cold-sync-limit parameter of the Database Synchronization feature, use the `config db-sync cold-sync-limit` command.

```
config db-sync cold-sync-limit limit
```

**Syntax Description**

| limit | Specifies the maximum number of times the master Subnet Manager will attempt to synchronize with a standby Subnet Manager during a cold sync period. |

**Defaults**

This value defaults to 2.

**Usage Guidelines**

This command configures the cold-sync-limit db-sync parameter. The cold-sync-limit is the maximum number of times a master Subnet Manager will attempt to synchronize with the standby Subnet Manager in a “cold-sync-period” time window.

**Examples**

```
ib_sm> config db-sync cold-sync-limit 4
```

**Related Commands**

- `config db-sync cold-sync-period`, page 3-5
- `config db-sync cold-sync-timeout`, page 3-6
- `show db-sync`, page 5-4
config db-sync cold-sync-period

To configure the cold-sync-period parameter of the Database Synchronization feature, use the `config db-sync cold-sync-period` command.

```
config db-sync cold-sync-period seconds
```

**Syntax Description**

| seconds | Specifies the time period, in seconds, to apply to the cold sync period. |

**Defaults**

This value defaults to 900 seconds.

**Usage Guidelines**

This command configures the cold-sync-period db-sync parameter. This parameter represents the duration in seconds of each db-sync window to which the "cold-sync-limit" is applied.

**Examples**

```
ib_sm> config db-sync cold-sync-period 60
```

**Related Commands**

- `config db-sync cold-sync-limit`, page 3-4
- `config db-sync cold-sync-timeout`, page 3-6
- `show db-sync`, page 5-4
**config db-sync cold-sync-timeout**

To configure the cold-sync-timeout parameter of the Database Synchronization feature, use the `config db-sync cold-sync-timeout` command.

```
config db-sync cold-sync-timeout seconds
```

**Syntax Description**

| seconds | Specifies the time period, in seconds, to apply to the timeout period. |

**Defaults**

This value defaults to 10 seconds.

**Usage Guidelines**

This command configures the cold-sync-timeout db-sync parameter. This parameter represents the number of seconds the master Subnet Manager will wait for a standby Subnet Manager to complete a full synchronization (cold-sync) after it has dispatched a db-sync request.

**Examples**

```
ib_sm> config db-sync cold-sync-timeout 5
```

**Related Commands**

- `config db-sync cold-sync-limit`, page 3-4
- `config db-sync cold-sync-period`, page 3-5
- `show db-sync`, page 5-4
**config db-sync disable**

To disable the Database Synchronization feature, use the `config db-sync disable` command.

```
config db-sync disable
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

Enabled by default.

**Usage Guidelines**

Disable the synchronization feature when you run only one Subnet Manager.

**Examples**

```
ib_sm> config db-sync disable
ib_sm> show db-sync

DB Sync Configuration and Status
--------------------------------------------------------------------------------
admin-state : disabled
```

**Related Commands**

- `config db-sync enable`, page 3-8
- `show db-sync`, page 5-4
**config db-sync enable**

To enable the Database Synchronization feature on your IB fabric, use the `config db-sync enable` command.

```plaintext
config db-sync enable
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

Enabled by default. To disable synchronization, see `config db-sync disable`, page 3-7.

**Usage Guidelines**

Enable the synchronization feature when you run one master Subnet Manager with one or more backup Subnet Managers.

**Examples**

```plaintext
ib_sm> config db-sync enable
ib_sm> show db-sync
```

```
DB Sync Configuration and Status
admin-state : enabled
```

**Related Commands**

`config db-sync disable`, page 3-7
`show db-sync`, page 5-4
config db-sync max-dbsync-sms

To configure the maximum number of Subnet Managers with which the master Subnet Manager will attempt to synchronize, use the `config db-sync max-dbsync-sms` command.

```
config db-sync max-dbsync-sms num-backups
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>num-backups</th>
<th>Specifies the maximum number of backup Subnet Managers with which the master Subnet Manager attempts to synchronize.</th>
</tr>
</thead>
</table>

**Defaults**

This value defaults to 1.

**Usage Guidelines**

Configure this parameter to limit the number of Subnet Managers with which the master Subnet Manager synchronizes.

**Examples**

```
ib_sm> config db-sync max-backup-sms 2
ib_sm show db-sync
```

```
================================================================================
DB Sync Configuration and Status
================================================================================
protocol-version : 25
admin-state : enabled
max-backup-dbsync-sms : 2
session-timeout(sec) : 5
poll-interval(sec) : 2
cold-sync-timeout(sec) : 5
cold-sync-limit : 4
cold-sync-period(sec) : 60
new-session-delay(sec) : 20
resync-interval(sec) : 600
state : not in-sync
```

**Related Commands**

`show db-sync`, page 5-4
config db-sync new-session-delay

To configure the new session delay parameter of the Database Synchronization feature, use the **config db-sync new-session-delay** command.

```
config db-sync new-session-delay seconds
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>seconds</strong></td>
<td>Specifies the time period, in seconds, to apply to the delay period.</td>
</tr>
</tbody>
</table>

**Defaults**

This value defaults to 120 seconds.

**Usage Guidelines**

This command specifies the amount of time that the master Subnet Manager waits before it attempts to initiate a synchronization session with a standby Subnet Manager.

**Examples**

```
ib_sm> config db-sync new-session-delay 20
```

**Related Commands**

`show db-sync`, page 5-4
config db-sync poll-interval

To configure the poll interval parameter of the Database Synchronization feature, use the `config db-sync poll-interval` command.

```
config db-sync poll-interval seconds
```

**Syntax Description**

| seconds | Specifies the time period, in seconds, to apply to the interval. |

**Defaults**

This value defaults to 3.

**Usage Guidelines**

The poll interval is the interval at which the master Subnet Manager polls an active standby Subnet Manager to verify synchronization. Use this command in conjunction with the `config db-sync session-timeout` command. The parameter controls how frequently the master Subnet Manager polls a fully-synchronized standby Subnet Manager.

**Examples**

```
ib_sm> config db-sync poll-interval 2
```

**Related Commands**

`show db-sync`, page 5-4
**config db-sync resync-interval**

To configure the resynchronization interval parameter of the Database Synchronization feature, use the `config db-sync resync-interval` command.

```
config db-sync resync-interval seconds
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>seconds</code></td>
<td>Specifies the time period, in seconds, to apply to the interval.</td>
</tr>
</tbody>
</table>

### Defaults

This value defaults to 3600 seconds.

### Usage Guidelines

The resync-interval specifies the interval at which the master Subnet Manager sends a resynchronization request to all active sync sessions. The resynchronization interval controls the frequency with which a synchronized standby Subnet Manager validates its database against the master Subnet Manager. If necessary, the standby Subnet Manager initiates a full resynchronization.

### Examples

```
ib_sm> config db-sync resync-interval 600
```

### Related Commands

`show db-sync`, page 5-4
**config db-sync session-timeout**

To configure the session timeout parameter of the Database Synchronization feature, use the `config db-sync session timeout` command.

```
config db-sync session-timeout seconds
```

**Syntax Description**

| `seconds` | Specifies the time period, in seconds, to apply to the timeout. |

**Defaults**

This value defaults to 10 seconds.

**Usage Guidelines**

The session timeout specifies the interval, in seconds, during which a synchronization session status MAD packet must arrive at the master Subnet Manager to maintain synchronization. This value should be greater than the poll-interval value.

**Examples**

```
ib_sm> config db-sync session-timeout 5
ib_sm> show db-sync
```

```
DB Sync Configuration and Status

-----------------------------------------------
 protocol-version : 25
 admin-state : enabled
 max-dbsync-sms : 2
 session-timeout(sec) : 5
 poll-interval(sec) : 2
 cold-sync-timeout(sec) : 5
 cold-sync-limit : 4
 cold-sync-period(sec) : 60
 new-session-delay(sec) : 20
 resync-interval(sec) : 600
 state : not in-sync
```

**Related Commands**

`show db-sync`, page 5-4
**config lmc**

To configure the LID Mask Control value for all end ports in the subnet, use the `config lmc` command.

```plaintext
config lmc value
```

**Syntax Description**

| value | Specifies the number of least significant bits masked by a physical port when attempting to match the destination LID of a packet with its assigned LID. |

**Defaults**

This value defaults to 0.

**Usage Guidelines**

This command configures the Lid Mask Control (LMC) value for all endpoints in the subnet. Each port is given $2^{lmc}$ LIDs.

A non-zero LMC is typically employed in a subnet to enable multipathing. The LMC value range is $(0 \leq lmc \leq 7)$.

**Examples**

```plaintext
ib_sm> show port -s
====================================================================
Subnet Manager Port Summary
====================================================================
node-guid    port  lid  state     link
--------------------------------------------------------------------
00:05:ad:00:00:01:60:04    0   4    active 4x-sdr
00:05:ad:00:00:04:e4:4c    1   896 active 4x-sdr
00:05:ad:00:00:04:e5:1c    1   904 active 4x-sdr
00:05:ad:00:00:04:e5:24    1   888 active 4x-sdr
00:05:ad:00:00:04:e5:64    1   912 active 4x-sdr
ib_sm> config lmc 2
ib_sm> show config
====================================================================
Subnet Manager Configuration
====================================================================
LID-mask-control : 2
ib_sm>
ib_sm> show port -s
====================================================================
Subnet Manager Port Summary
====================================================================
node-guid    port  lid  state     link
--------------------------------------------------------------------
00:05:ad:00:00:01:60:04    0   2    active 4x-sdr 4x
00:05:ad:00:00:04:e4:4c    1   897 active 4x-sdr 4x
00:05:ad:00:00:04:e5:1c    1   905 active 4x-sdr 4x
00:05:ad:00:00:04:e5:24    1   889 active 4x-sdr 4x
00:05:ad:00:00:04:e5:64    1   913 active 4x-sdr 4x
```
Related Commands

- show config, page 5-3
- show port, page 5-31
config local-node-retries

To configure the number of times that the Subnet Manager will retry communicating with its local node, use the `config local-node-retries` command.

```
config local-node-retries value
```

**Syntax Description**

<table>
<thead>
<tr>
<th>value</th>
<th>Specifies the number of times that the Subnet Manager will retry communicating with its local node.</th>
</tr>
</thead>
</table>

**Defaults**

This command defaults to 10.

**Usage Guidelines**

This command configures the number of times that the Subnet Manager will retry communicating with its local node before giving up and exiting.

```
ib_sm> config local-node-retries 20
ib_sm> show config
```

```
================================================================================
Subnet Manager Configuration
================================================================================
  subnet-prefix : fe:80:00:00:00:00:00:00
  guid : 00:05:ad:00:00:04:e5:25
  priority : 12
  sm-key : 00:00:00:00:00:00:ff
  oper-status : master
  act-count : 17975
  sweep-interval(sec) : 15
  response-timeout(msec) : 250
  mad-retries : 7
  node-timeout : 60
  master-poll-interval(sec) : 5
  master-poll-retries : 3
  max-active-sms : 2
  LID-mask-control : 2
  switch-life-time : 15
  sw-link-hoqlife : 15
  ca-link-hoqlife : 15
  max-hops : 5
  wait-report-response : true
  sa-mad-queue-depth : 512
  local-node-retries : 20
  qos-admin-state : enabled
  max-operational-v1 : auto-subnet
  min-vl-cap-detected : vl0-vl17
```

```
ib_sm> config wait-report-response false
```

**Related Commands**

`show config`, page 5-3
config mad-retries

To configure the number of times that the Subnet Manager resends a MAD packet before it labels the transaction as “failed,” use the config mad-retries command.

config mad-retries milliseconds value

Syntax Description

<table>
<thead>
<tr>
<th>milliseconds</th>
<th>Specifies the retry duration, in milliseconds.</th>
</tr>
</thead>
<tbody>
<tr>
<td>value</td>
<td>Specifies the number of times the Subnet Manager retries sending a MAD.</td>
</tr>
</tbody>
</table>

Defaults

This value defaults to 5.

Usage Guidelines

This command configures the number of times that the Subnet Manager will resend a MAD packet before declaring a transaction failed. The packet is retried at each response-timeout interval.

Examples

ib_sm> config mad-retries 7
ib_sm> show config

========================================================================================================
Subnet Manager Configuration
========================================================================================================
  subnet-prefix : fe:80:00:00:00:00:00:00
  guid : 00:05:ad:00:00:04:e5:25
  priority : 12
  sm-key : 00:00:00:00:00:00:ff
  oper-status : master
  act-count : 17975
  sweep-interval(sec) : 15
  response-timeout(msec) : 250
  mad-retries : 7
  node-timeout : 60
  master-poll-interval(sec) : 5
  master-poll-retries : 3
  max-active-sms : 2
  LID-mask-control : 2
  switch-life-time : 15
  sw-link-hqlife : 15
  ca-link-hqlife : 15
  max-hops : 5
  wait-report-response : true
  sa-mad-queue-depth : 512
  local-node-retries : 20
  qos-admin-state : enabled
  max-operational-vl : auto-subnet
  min-vl-cap-detected : vl0-vl7
ib_sm> config wait-report-response false

Related Commands

config response-timeout, page 3-51
show config, page 5-3
config master-poll-interval

To configure how frequently a standby Subnet Manager polls the master to verify that the master is active, use the config master-poll-interval command.

```
config master-poll-interval seconds
```

### Syntax Description

<table>
<thead>
<tr>
<th>seconds</th>
<th>Specifies the poll interval, in seconds.</th>
</tr>
</thead>
</table>

### Defaults

This value defaults to 3.

### Usage Guidelines

This command configures how frequently a standby Subnet Manager polls a master to verify that it is still controlling the subnet.

### Examples

```
ib_sm> config master-poll-interval 5
ib_sm> show config
```

```
==================================================================================================
Subnet Manager Configuration
==================================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:ff:00
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
master-poll-interval(sec) : 5
master-poll-retries : 3
max-activesms : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hoqlife : 15
cailink-hoqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : v10-v17
```

### Related Commands

config master-poll-retries, page 3-19
show config, page 5-3
config master-poll-retries

To configure the number of times that a standby Subnet Manager unsuccessfully polls the master Subnet Manager before labeling the master “down,” use the config master-poll-retries command.

`config master-poll-retries integer`

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>integer</code></td>
<td>Specifies the number of retries.</td>
</tr>
</tbody>
</table>

**Defaults**

This value defaults to 2.

**Usage Guidelines**

This command configures the number of successive failed attempts by a standby Subnet Manager to successfully poll the master Subnet Manager before triggering master Subnet Manager failover logic.

**Examples**

```
ib_sm> config master-poll-retries 3
ib_sm> show config
```

```
========================================================================================================
Subnet Manager Configuration
========================================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:00:ff
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
master-poll-interval(sec) : 5
master-poll-retries : 3
max-active-sms : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hoqlife : 15
ca-link-hoqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : v10-v17
```

**Related Commands**

- config master-poll-interval, page 3-18
- show config, page 5-3
**config max-active-sms**

To configure the maximum number of Subnet Managers active on the subnet, use the `config max-active-sms` command.

```
config max-active-sms integer
```

**Syntax Description**

| integer | Specifies the number of active Subnet Managers. |

**Defaults**

This value defaults to 0.

**Usage Guidelines**

This command is not currently used.

**Examples**

```
ib_sm> config max-active-sms 2
ib_sm> show config
```

```
====================================================================
Subnet Manager Configuration
====================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:00:ff
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
master-poll-interval(sec) : 5
master-poll-retries : 3
max-active-sms : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hoqlife : 15
ca-link-hoqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : vl0-vl7
```

**Related Commands**

`show config`, page 5-3
**config max-hops**

To configure the maximum number of switches that the routing algorithm checks on the path to a destination, use the `config max-hops` command.

```
cfg max-hops integer
```

**Syntax Description**

| integer | Specifies the number of switches to check. |

**Defaults**

This value defaults to 64.

**Usage Guidelines**

This command configures the maximum number of switches the routing algorithm will check on a path to a destination. For large fat-tree networks, reducing this value can greatly speed up the routing calculation. If the value is tuned too low, such that switches would be unable to reach some destinations in the network, the Subnet Manager will ignore the configured value and instead calculate and use the lowest value that will ensure all destinations are still reachable. The value 0 has a special meaning. It means that the Subnet Manager will calculate and use the lowest value that will ensure all destinations are reachable.

**Note**

By restricting the length of paths that the Subnet Manager will consider, the Subnet Manager might choose paths that are optimal for distance but not for other factors, such as uniform link capacity.

```
ib_sm> config max-hops 5
ib_sm> show config
=================================================================================================
Subnet Manager Configuration
=================================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:ff
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
master-poll-interval(sec) : 5
master-poll-retries : 3
max-active-sms : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hoqlife : 15
c-a-link-hoqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : vl10-v17
```
config max-hops

Related Commands  show config, page 5-3
config max-operational-vl

To configure the maximum permissible Operational VL value for ports in the subnet, use the config max-operational-vl command.

config max-operational-vl value

**Syntax Description**

| value | Specifies the value. |

**Defaults**

This value defaults to auto-link.

**Usage Guidelines**

This command limits the range of data VLs configured in the subnet.

When this command is set to the default value, the operational VL value of a port is limited only by the VL capabilities of its neighbor port. The number of data VLs available on a link in the subnet is determined by the smallest VL capability of the ports associated with it.

Use this command to further limit the configured operational VL values of ports. If a non-default limit is specified and is lower than the auto-detected operational VL value of a port, the new value is enforced at the port.

You might want to configure this parameter for these reasons:

- To limit the number of operational data VLs in a fabric, which increases the buffer allocation per VL and could lead to increased link throughput for certain traffic patterns
- To achieve uniformity of configured VLs across a fabric with different VL capabilities. A maximum operational VL value can be set either explicitly to the lowest VL Cap value of active ports in the fabric or to the “auto detect” value of auto-subnet. The “auto detect” setting allows the Subnet Manager to determine this optimal value during a fabric sweep and to configure the active ports in the fabric accordingly.

**Note**

To configure the max-operational-vl value, you must enable the QoS feature in the Subnet Manager.

**Examples**

ib_sm> config max-operational-vl auto-subnet
ib_sm> show config

```
Subnet Manager Configuration

subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:00:ff
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
```
master-poll-interval(sec) : 5
master-poll-retries : 3
max-active-sms : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hoqlife : 15
caselink-hoqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : vl0-vl7

Related Commands show config, page 5-3
# config multicast-group-ib create

To create a generic IB multicast group, use the `config multicast-group-ib create` command.

```
config multicast-group-ib create mgid [-p p_key] [-q qkey] [-m mtu] [-r rate] [-l sl] [-s scope]
```

## Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>mgid</td>
<td>Specifies the global ID to apply to the multicast group.</td>
</tr>
<tr>
<td>-p</td>
<td>Applies a partition key to the multicast group.</td>
</tr>
<tr>
<td>p_key</td>
<td>Specifies the partition key to apply to the multicast group.</td>
</tr>
<tr>
<td>-q</td>
<td>Applies a qkey to the multicast group.</td>
</tr>
<tr>
<td>qkey</td>
<td>Specifies the QKey to apply to the multicast group.</td>
</tr>
<tr>
<td>-m</td>
<td>Applies a maximum transmission unit to the multicast group.</td>
</tr>
<tr>
<td>mtu</td>
<td>Specifies the maximum transmission unit to apply to the multicast group.</td>
</tr>
<tr>
<td>-r</td>
<td>Applies a rate to the multicast group.</td>
</tr>
<tr>
<td>rate</td>
<td>Specifies the rate to apply to the multicast group.</td>
</tr>
<tr>
<td>-l</td>
<td>Indicates that the service level (SL) parameter is present.</td>
</tr>
<tr>
<td>sl</td>
<td>Specifies a service level.</td>
</tr>
<tr>
<td>-s</td>
<td>Indicates that a scope parameter is present.</td>
</tr>
<tr>
<td>scope</td>
<td>Specifies a scope parameter.</td>
</tr>
</tbody>
</table>

## Defaults

This command has no default settings.

## Usage Guidelines

This command creates a generic IB multicast group.

## Examples

```
ib_sm> config multicast-group-ib create ff:12:01:02:03:04:05:06:07:08:09:0a:0b:0c:0d:0e -p ff:ff
ib_sm> ib_sm> show multicast
```

```
All Multicast Groups

subnet-prefix : ff:80:00:00:00:00:00:00
mgid : ff:12:01:02:03:04:05:06:07:08:09:0a:0b:0c:0d:0e
q-key : 00:00:00:0b
mlid : 49155
mtu : 0
t-class : 0
p_key : ff:ff
rate : 10 gbps
packet-life-time : 2
sl : 0
flow-label : 00:00:00
hop-limit : 0
scope : link-local
user-configured : true
multicast-group-members : none
```
config multicast-group-ib create

subnet-prefix : fe:80:00:00:00:00:00:00
mgid : ff:12:40:1b:81:81:00:00:00:00:00:00:ff:ff:ff:ff
q-key : 80:00:00:0b
mlid : 49154
mtu : 0
t-class : 0
p_key : 81:81
rate : 10 gbps
packet-life-time : 2
sl : 0
flow-label : 00:00:00
hop-limit : 0
scope : link-local
user-configured : true
multicast-group-members : none

Related Commands show multicast, page 5-8
config multicast-group-ib delete

To delete a previously created IB multicast group, use the config multicast-group-ib delete command.

    config multicast-group-ib delete mgid

Syntax Description

| mgid       | Specifies the global ID of the multicast group. |

Defaults

This command has no default settings.

Usage Guidelines

This command deletes a previously created generic IB multicast group.

Examples

    ib_sm> config multicast-group-ib delete ff:12:01:02:03:04:05:06:07:08:09:0a:0b:0c:0d:0e -p ff:ff

Related Commands

    show multicast, page 5-8
**config multicast-group-ipoib create**

To create a multicast group for use by the IPoIB upper layer protocol, use the `config multicast-group-ipoib create` command.

```
config multicast-group-ipoib create p_key [-q qkey] [-m mtu] [-r rate] [-l sl] [-s scope]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>p_key</td>
<td>Partition key to apply to the multicast group.</td>
</tr>
<tr>
<td>-q</td>
<td>Applies a qkey to the multicast group.</td>
</tr>
<tr>
<td>qkey</td>
<td>Specifies the Qkey to apply to the multicast group.</td>
</tr>
<tr>
<td>-m</td>
<td>Applies a maximum transmission unit to the multicast group.</td>
</tr>
<tr>
<td>mtu</td>
<td>Specifies the maximum transmission unit to apply to the multicast group.</td>
</tr>
<tr>
<td>-r</td>
<td>Applies a rate to the multicast group.</td>
</tr>
<tr>
<td>rate</td>
<td>Specifies the rate to apply to the multicast group.</td>
</tr>
<tr>
<td>-l</td>
<td>Indicates that the service level (SL) parameter is present.</td>
</tr>
<tr>
<td>sl</td>
<td>Specifies a service level.</td>
</tr>
<tr>
<td>-s</td>
<td>Indicates that a scope parameter is present.</td>
</tr>
<tr>
<td>scope</td>
<td>Specifies a scope parameter.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command creates a multicast group for use by the IPoIB upper layer protocol.

**Examples**

```
ib_sm> config partition key create 81:81
ib_sm> config multicast-group-ipoib create 81:81
ib_sm> show multicast
```

```
=================================================================================================
All Multicast Groups
=================================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
mgid : ff:12:40:1b:81:81:00:00:00:00:ff:ff:ff:ff
q-key : 80:00:00:0b
mlid : 49154
mtu : 0
t-class : 0
p_key : 81:81
rate : 10 gbps
packet-life-time : 2
sl : 0
flow-label : 00:00:00
hop-limit : 0
scope : link-local
user-configured : true
multicast-group-members : none
```
subnet-prefix : fe:80:00:00:00:00:00:00
  mgid : ff:12:40:1b:ff:ff:00:00:00:00:00:00:00:00:01
  q-key : 00:00:00:0b
  mlid : 49153
  mtu : 2048
  t-class : 0
  p_key : ff:ff
  rate : 2500 mbps
  packet-life-time : 2
  sl : 0
  flow-label : 00:00:00
  hop-limit : 0
  scope : link-local
  user-configured : false

  multicast-group-members : 

Related Commands
config partition key, page 3-32
show multicast, page 5-8
**config multicast-group-ipoib delete**

To delete a multicast group in use by the IPoIB upper layer protocol, use the `config multicast-group-ipoib delete` command.

```
config multicast-group-ipoib delete p_key [-s scope]
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command deletes a multicast group previously created for use by the IPoIB upper layer protocol.

**Examples**

```
ib_sm> config multicast-group-ipoib delete 81:81
ib_sm> show multicast
```

<table>
<thead>
<tr>
<th>All Multicast Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td>subnet-prefix : fe:80:00:00:00:00:00:00</td>
</tr>
<tr>
<td>mgid : ff:12:40:1b:ff:ff:ff:00:00:00:00:00:00:00:00:01</td>
</tr>
<tr>
<td>q-key : 00:00:00:0b</td>
</tr>
<tr>
<td>mlid : 49153</td>
</tr>
<tr>
<td>mtu : 2048</td>
</tr>
<tr>
<td>t-class : 0</td>
</tr>
<tr>
<td>p_key : ff:ff</td>
</tr>
<tr>
<td>rate : 2500 mbps</td>
</tr>
<tr>
<td>packet-life-time : 2</td>
</tr>
<tr>
<td>sl : 0</td>
</tr>
<tr>
<td>flow-label : 00:00:00</td>
</tr>
<tr>
<td>hop-limit : 0</td>
</tr>
<tr>
<td>scope : link-local</td>
</tr>
<tr>
<td>user-configured : false</td>
</tr>
</tbody>
</table>

**Related Commands**

show multicast, page 5-8
config node-timeout

To configure the interval that the Subnet Manager waits for a Node Info response from a channel adapter before declaring the channel adapter “bad,” use the config node-timeout command.

```
config node-timeout seconds
```

**Syntax Description**

`seconds` Specifies the timeout interval, in seconds.

**Defaults**

This value defaults to 10 seconds.

**Usage Guidelines**

This command configures how long the Subnet Manager will wait for a NodeInfo response from a Channel Adapter before declaring the CA bad and bringing down the attached switch port. This configuration is a failsafe for channel adapters that have become unresponsive.

**Examples**

```
ib_sm> config node-timeout 60
ib_sm> show config
```

```
================================================================================
Subnet Manager Configuration
================================================================================
 subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:00:ff
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
master-poll-interval(sec) : 5
master-poll-retries : 3
max-active-sms : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hoqlife : 15
cr-link-hoqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : v10-v17
```

**Related Commands**

show config, page 5-3
To create or delete a partition, use the `config partition key` command.

```
config partition key {create | delete} p_key [-i {enabled | disabled}]
```

### Syntax Description

- **create**: Creates a partition.
- **delete**: Deletes a partition.
- **p_key**: Partition key.
- **-i**: (Optional) Configures whether or not IPoIB is enabled for this partition.
  - **enabled**: (Optional) Specifies that IPoIB is enabled
  - **disabled**: (Optional) Specifies that IPoIB is disabled.

### Defaults

IPoIB is enabled by default.

### Usage Guidelines

This command creates or deletes a partition with the given P_Key.

### Examples

```
ib_sm> config partition key create 81:81 -i disabled
ib_sm> show partition
```

```
================================================================================
All Partitions
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
  p-key : 81:81
  ipoib : disabled
partition-members : none
  subnet-prefix : fe:80:00:00:00:00:00:00
  p-key : ff:ff
  ipoib : enabled
partition-members :
  node-guid : 00:05:ad:00:00:01:60:04
  port-num : 0
  member-type : full
  node-guid : 00:05:ad:00:00:04:e4:4c
  port-num : 1
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:1c
  port-num : 1
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:24
  port-num : 1
  member-type : full
```
node-guid : 00:05:ad:00:00:04:e5:64
port-num : 1
member-type : full

Related Commands

config partition key ipoib, page 3-34
config partition member add, page 3-36
config partition member remove, page 3-37
config partition member type, page 3-38
show partition, page 5-14
config partition key ipoib

To enable or disable IPoIB on a partition key, use the **config partition key ipoib** command.

```
config partition key ipoib p_key {enabled | disabled}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>p_key</th>
<th>Specifies the partition key.</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>Specifies that IPoIB is enabled</td>
</tr>
<tr>
<td>disabled</td>
<td>Specifies that IPoIB is disabled</td>
</tr>
</tbody>
</table>

**Defaults**

IPoIB is enabled by default.

**Usage Guidelines**

This command enables or disables IPoIB on a partition with the given P_Key.

**Examples**

```
ib_sm> config partition key ipoib 81:81 -i disabled
ib_sm> show partition
```

```
================================================================================
All Partitions
================================================================================

subnet-prefix : fe:80:00:00:00:00:00:00
p-key : 81:81
ipoib : disabled
partition-members : none

subnet-prefix : fe:80:00:00:00:00:00:00
p-key : ff:ff
ipoib : enabled
partition-members :
  node-guid : 00:05:ad:00:00:01:60:04
  port-num : 0
  member-type : full
  node-guid : 00:05:ad:00:00:04:e4:4c
  port-num : 1
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:1c
  port-num : 1
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:24
  port-num : 1
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:64
  port-num : 1
  member-type : full
```
Related Commands

- config partition key, page 3-32
- config partition member add, page 3-36
- config partition member remove, page 3-37
- config partition member type, page 3-38
- show partition, page 5-14
config partition member add

To add a port to a partition, use the config partition member add command.

```
config partition member add p_key guid port {full | limited}
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>p_key</code></td>
<td>Specifies the partition key of the partition to which to add the port.</td>
</tr>
<tr>
<td><code>guid</code></td>
<td>Specifies the GUID of the node on which the port resides.</td>
</tr>
<tr>
<td><code>port</code></td>
<td>Specifies the port to add to the partition.</td>
</tr>
<tr>
<td><code>full</code></td>
<td>Applies full membership to the port.</td>
</tr>
<tr>
<td><code>limited</code></td>
<td>Applies limited membership to the port.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command adds a port to the given partition as a member of the given type (full or limited).

**Examples**

```
ib_sm> config partition member add 81:81 00:05:ad:00:00:04:e4:4c 1 full
ib_sm> config partition member add 81:81 00:05:ad:00:00:04:e5:1c 1 limited
ib_sm> config partition member add 81:81 00:05:ad:00:00:04:e5:24 1 full
ib_sm> show partition -k 81:81
================================================================================
Partition for specified P_Key
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
p-key : 81:81
ipoib : disabled
partition-members :
  node-guid : 00:05:ad:00:00:04:e4:4c
  port-num : 1
  member-type : full
  node-guid : 00:05:ad:00:00:04:e5:1c
  port-num : 1
  member-type : limited
  node-guid : 00:05:ad:00:00:04:e5:24
  port-num : 1
  member-type : full
```

**Related Commands**

- config partition key, page 3-32
- config partition key ipoib, page 3-34
- config partition member remove, page 3-37
- config partition member type, page 3-38
- show partition, page 5-14
config partition member remove

To remove a port from a partition, use the `config partition member remove` command.

```
config partition member remove p_key guid port
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>p_key</code></td>
<td>Specifies the partition key of the partition to remove from the port.</td>
</tr>
<tr>
<td><code>guid</code></td>
<td>Specifies the GUID of the node on which the port resides.</td>
</tr>
<tr>
<td><code>port</code></td>
<td>Specifies the port to remove from the partition.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command removes a port from a partition.

**Examples**

```
ib_sm> config partition member remove 81:81 00:05:ad:00:00:04:e5:1c 1
ib_sm> show partition -k 81:81
```

```
================================================================================
Partition for specified P_Key
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
p-key : 81:81
ipoib : disabled

partition-members :
   node-guid : 00:05:ad:00:00:04:e4:4c
   port-num : 1
   member-type : full

   node-guid : 00:05:ad:00:00:04:e5:24
   port-num : 1
   member-type : full
```

**Note**

This example is a continuation of the example for `config partition member add`.

**Related Commands**

- `config partition key`, page 3-32
- `config partition key ipoib`, page 3-34
- `config partition member add`, page 3-36
- `config partition member type`, page 3-38
- `show partition`, page 5-14
To change the type of membership assigned to a port in a partition, use the `config partition member type` command.

```
config partition member type p_key guid port {full | limited}
```

**Syntax Description**
- `p_key` Specifies the partition key of the partition that includes the port whose type you want to change.
- `guid` Specifies the GUID of the node on which the port resides.
- `port` Specifies the port that is a member of the partition.
- `full` Applies full membership to the port.
- `limited` Applies limited membership to the port.

**Defaults**
This command has no default settings.

**Usage Guidelines**
Use this command to change the membership type for a port that is already a member of the partition.

**Examples**
```
ib_sm> config partition member type 81:81 00:05:ad:00:00:04:e5:24 1 limited
ib_sm> show partition -k 81:81
```

```
================================================================================
Partition for specified P_Key
================================================================================
  subnet-prefix : fe:80:00:00:00:00:00:00
  p-key : 81:81
  ipoib : disabled
  partition-members :
    node-guid : 00:05:ad:00:00:04:e4:4c
    port-num : 1
    member-type : full
  node-guid : 00:05:ad:00:00:04:e5:24
  port-num : 1
  member-type : limited
```

**Note**
This example is a continuation of the example for `config partition member add`.

**Related Commands**
- `config partition key`, page 3-32
- `config partition key ipoib`, page 3-34
- `config partition member add`, page 3-36
config partition member remove, page 3-37
show partition, page 5-14
**config pm connection monitor**

To add a connection to or remove a connection from the list of connections that the PM monitors, use the `config pm connection monitor` command.

```
config pm connection monitor {create | delete} src-lid dst-lid
```

**Syntax Description**

- **create**: Adds a connection to the list of monitored connections.
- **delete**: Removes a connection from the list of monitored connections.
- **src-lid**: Specifies the source LID of the connection.
- **dst-lid**: Specifies the destination LID of the connection.

**Examples**

```
ib_sm> config pm connection monitor create 904 888
ib_sm> show pm connection monitors

================================================================================
All PM Monitored Connections
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
src-lid : 904
dst-lid : 888
error-status : not exceeded
utilization-status : not exceeded
port-errors : 0
utilization-errors : 0

ib_sm> show pm connection monitors

================================================================================
All PM Monitored Connections
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
src-lid : 904
dst-lid : 888
error-status : not exceeded
utilization-status : exceeded
port-errors : 0
utilization-errors : 2
port-error : 1
node-guid : 00:05:ad:00:00:04:e5:1c
port-num : 1
chassis-guid : 00:00:00:00:00:00:00:00
slot-num : 0
ext-port-num : 0
error-type : xmit-rate
port-error : 2
```
config pm connection monitor

node-guid : 00:05:ad:00:00:04:e5:24
port-num : 1
chassis-guid : 00:00:00:00:00:00:00:00
slot-num : 0
ext-port-num : 0
error-type : rcv-rate

Related Commands  show pm connection monitors, page 5-19
To configure the polling interval at which the PM monitors ports in the network, use the `config pm monitor poll-interval` command.

```
config pm monitor poll-interval seconds
```

**Syntax Description**

- `seconds` Specifies the duration of the poll interval, in seconds.

**Defaults**

This value defaults to 10.

**Usage Guidelines**

This command configures the polling interval at which the PM monitors ports in the network.

**Examples**

```
ib_sm> show pm monitor config

================================================================================
PM monitor configuration
================================================================================
state : enabled-cisco-switches
poll-interval : 10 seconds
start-delay : 60 seconds

ib_sm> config pm monitor poll-interval 30
ib_sm> show pm monitor config

================================================================================
PM monitor configuration
================================================================================
state : enabled-cisco-switches
poll-interval : 30 seconds
start-delay : 5 seconds
```

**Related Commands**

- `show pm monitor config`, page 5-24
config pm monitor start-delay

To configure the Performance Monitoring start delay value, use the `config pm port monitor start-delay` command.

```
config pm monitor start-delay seconds
```

### Syntax Description

| seconds | Specifies the duration of the delay, in seconds. |

### Defaults

This value defaults to 60 seconds.

### Usage Guidelines

The start delay determines how long the PM waits after it is enabled to begin to gather counter information.

### Examples

```
ib_sm> config pm monitor start-delay 60
```

### Related Commands

`show pm monitor config`, page 5-24
**config pm monitor state**

To enable or disable performance monitoring, use the `config pm monitor state` command.

```
config pm monitor state {disabled | enabled | enabled-cisco-switches | enabled-all}
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>disabled</td>
<td>Disables performance monitoring.</td>
</tr>
<tr>
<td>enabled</td>
<td>Monitors only ports that have been configured using the <code>config pm monitored port</code> command.</td>
</tr>
<tr>
<td>enabled-cisco-switches</td>
<td>Enables performance monitoring on Cisco switches that run Cisco port_agent software and on any ports that have been configured using the <code>config pm monitored port</code> command.</td>
</tr>
<tr>
<td>enabled-all</td>
<td>Enables performance monitoring for all ports in the IB fabric.</td>
</tr>
</tbody>
</table>

**Defaults**

Disabled by default.

**Usage Guidelines**

If you use `enabled-cisco-switches`, only ports on switches running the port_agent software are monitored. This keyword allows the monitoring to be distributed through the network, which allows the PM to monitor ports without polling.

**Examples**

```
ib_sm> show pm monitor config
================================================================================
PM monitor configuration
================================================================================
state : disabled
poll-interval : 10 seconds
start-delay : 60 seconds

ib_sm> config pm monitor state enabled-cisco-switches

ib_sm> show pm monitor config
================================================================================
PM monitor configuration
================================================================================
state : enabled-cisco-switches
poll-interval : 10 seconds
start-delay : 60 seconds
```

**Related Commands**

`show pm monitor config`, page 5-24
**config pm monitored port**

To add or remove a port from the list of monitored ports, use the `config pm monitored port` command.

```
config pm monitored port {add | remove} guid port
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>add</td>
<td>Adds the specified port.</td>
</tr>
<tr>
<td>remove</td>
<td>Removes the specified port.</td>
</tr>
<tr>
<td>guid</td>
<td>Specifies the GUID of the node on which the port resides.</td>
</tr>
<tr>
<td>port</td>
<td>Specifies the port to add or remove.</td>
</tr>
</tbody>
</table>

**Defaults**

By default, the list of monitored ports is empty.

**Usage Guidelines**

This command adds or removes a port from the list of ports being monitored by the PM.

**Examples**

```
ib_sm> config pm monitored port add 00:05:ad:00:00:04:e5:24 1
ib_sm> config pm monitored port add 00:05:ad:00:00:04:e4:4c 1
ib_sm> config pm monitored port add 00:05:ad:00:00:04:e5:1c 1
ib_sm> config pm monitored port add 00:05:ad:00:00:04:e5:64 1
ib_sm> show pm monitored ports
```

```
===========================================================================
All PM Monitored Ports
===========================================================================
subnet-prefix: fe:80:00:00:00:00:00:00
  node-guid: 00:05:ad:00:00:04:e4:4c
  port-num: 1

subnet-prefix: fe:80:00:00:00:00:00:00
  node-guid: 00:05:ad:00:00:04:e5:1c
  port-num: 1

subnet-prefix: fe:80:00:00:00:00:00:00
  node-guid: 00:05:ad:00:00:04:e5:64
  port-num: 1
```

**Related Commands**

`show pm monitored ports`, page 5-25
**config pm port counter access**

To grant port counter access, use the `config pm port counter access` command.

```
config pm port counter access enabled | disabled
```

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>enabled</td>
<td>Enables the port counter feature.</td>
</tr>
<tr>
<td>disabled</td>
<td>Disables the port counter feature.</td>
</tr>
</tbody>
</table>

### Defaults

This setting is enabled by default.

### Usage Guidelines

This command enables or disables the port counter feature.

### Examples

```
ib_sm> show pm port counter access
PM Port Counter Access
port-counter-access : enabled

ib_sm> config pm port counter access disabled

ib_sm> show pm port counter access
PM Port Counter Access
port-counter-access : disabled

ib_sm> config pm port counter access enabled

ib_sm> show pm port counter access
PM Port Counter Access
port-counter-access : enabled
```

### Related Commands

`show pm port counter access`, page 5-26
# config pm threshold

To configure the available threshold values for the Performance Monitoring feature, use the `config pm threshold` command.

```
config pm threshold threshold value
```

## Syntax Description

<table>
<thead>
<tr>
<th><code>threshold</code></th>
<th>The following thresholds are available:</th>
</tr>
</thead>
<tbody>
<tr>
<td>symbol-errors</td>
<td></td>
</tr>
<tr>
<td>link-recovery-errors</td>
<td></td>
</tr>
<tr>
<td>link-downs</td>
<td></td>
</tr>
<tr>
<td>rcv$errors</td>
<td></td>
</tr>
<tr>
<td>rcv-remote-phy-errors</td>
<td></td>
</tr>
<tr>
<td>rcv-switch-relay-errors</td>
<td></td>
</tr>
<tr>
<td>xmit-discards</td>
<td></td>
</tr>
<tr>
<td>xmit-constraint-errors</td>
<td></td>
</tr>
<tr>
<td>rcv-constraint-errors</td>
<td></td>
</tr>
<tr>
<td>local-link-integrity-errors</td>
<td></td>
</tr>
<tr>
<td>excessive-buf-overrun-errors</td>
<td></td>
</tr>
<tr>
<td>vl15-dropped</td>
<td></td>
</tr>
<tr>
<td>xmit-rate</td>
<td></td>
</tr>
<tr>
<td>rcv-rate</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><code>value</code></th>
<th>The following options are available:</th>
</tr>
</thead>
<tbody>
<tr>
<td>none</td>
<td></td>
</tr>
<tr>
<td>a decimal value</td>
<td></td>
</tr>
</tbody>
</table>

## Defaults

By default, all thresholds are configured to “none.”

## Usage Guidelines

Each threshold is checked at every polling interval and any port having a counter (or rate) exceeding a specified threshold is flagged.

The xmit-rate and rcv-rate thresholds are specified as a percentage of available port bandwidth. All other thresholds are specified as absolute counter values.

## Examples

```
ib_sm> config pm threshold xmit-rate 1
ib_sm> config pm threshold rcv-rate 1
```

### Note

This example sets triggers on all links so when any port exceeds 1% link utilization for a polling interval, on either transmit or receive, the PM will trigger on those ports that exceed the specified threshold.
config pm threshold

Related Commands  show pm threshold, page 5-30
**config priority**

To configure the priority of the Subnet Manager, use the `config priority` command.

```
config priority integer
```

**Syntax Description**

`integer` Specifies the priority of the Subnet Manager.

**Defaults**

This value defaults to 0.

**Note**

HSM values and embedded Subnet Manager values differ.

- Switch/embedded default priority is 10.
- HSM default priority is 0.
- The default run script for the HSM invokes the HSM at a priority of 11.

**Usage Guidelines**

This command configures the Subnet Manager priority. The default value that is compiled into the Subnet Manager is 0, but the invocation script that is shipped with the HSM sets the value to 11, so the HSM will take priority over a Cisco switch-based Subnet Manager.

**Examples**

```
ib_sm> config priority 12
ib_sm> show config
```

```
================================================================================
Subnet Manager Configuration
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
  guid : 00:05:ad:00:00:04:e5:25
  priority : 12
  sm-key : 00:00:00:00:00:00:ff
  oper-status : master
  act-count : 17975
  sweep-interval(sec) : 15
  response-timeout(msec) : 250
  mad-retries : 7
  node-timeout : 60
  master-poll-interval(sec) : 5
  master-poll-retries : 3
  max-active-sm : 2
  LID-mask-control : 2
  switch-life-time : 15
  sw-link-hoqlife : 15
  ca-link-hoqlife : 15
  max-hops : 5
  wait-report-response : true
  sa-mad-queue-depth : 512
  local-node-retries : 20
  qos-admin-state : enabled
  max-operational-vl : auto-subnet
  min-vl-cap-detected : vl10-v17
```
Related Commands

show config, page 5-3
config response-timeout

To configure how long the Subnet Manager waits for a response to a MAD packet before retrying the transaction, use the `config response-timeout` command.

```
config response-timeout milliseconds
```

### Syntax Description

| milliseconds | Specifies the timeout interval, in milliseconds. |

### Defaults

This value defaults to 200.

### Usage Guidelines

This command configures how long the Subnet Manager waits (in milliseconds) for a response to a MAD packet before retrying the transaction. Configure the `mad-retries` parameter to specify the number of times that the transaction is retried before it is aborted.

### Examples

```
ib_sm> config response-timeout 250
ib_sm> show config
```

```
================================================================================
Subnet Manager Configuration
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:00:ff
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
master-poll-interval(sec) : 5
master-poll-retries : 3
max-active-sms : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hqlife : 15
cr-link-hqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : v10-v17
```

```
ib_sm> config wait-report-response false
```

### Related Commands

- `config mad-retries`, page 3-17
- `show config`, page 5-3
config route-around chassis

To create or delete a route-around entry for a chassis, use the `config route-around` chassis command.

`config route-around chassis {create | delete} chassis-guid`

**Syntax Description**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>create</code></td>
<td>Creates a route-around entry for a chassis.</td>
</tr>
<tr>
<td><code>delete</code></td>
<td>Deletes a route-around entry for a chassis.</td>
</tr>
<tr>
<td><code>chassis-guid</code></td>
<td>Specifies the GUID of the chassis for which you create or delete a route-around entry.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command creates or deletes a route-around entry for a chassis.

**Note**

A chassis GUID is the unique GUID that identifies a chassis. It is based on the system image GUID of any switch node inside the chassis, with the fifth byte zeroed.

**Examples**

```plaintext
ib_sm> config route-around chassis create 00:05:ad:00:01:00:d0:50
ib_sm> show route-around
```

```
====================================================================================================
All Route-Around entries
====================================================================================================
  subnet-prefix : fe:80:00:00:00:00:00:00
  type : chassis
  chassis-guid : 00:05:ad:00:01:00:d0:50
```

**Related Commands**

`show route-around`, page 5-34
config route-around node

To create or delete a route-around entry for a node, use the `config route-around node` command.

`config route-around node {create | delete} node-guid`

### Syntax Description

- **create**: Creates a route-around entry for a node.
- **delete**: Deletes a route-around entry for a node.
- **node-guid**: Specifies the GUID of the node for which you create or delete a route-around entry.

### Defaults

This command has no default settings.

### Usage Guidelines

This command creates or deletes a route-around entry for a node.

### Examples

```
ib_sm> config route-around node create 00:05:ad:00:00:01:0c:19
ib_sm> show route-around
```

```
===============================================================================
All Route-Around entries
===============================================================================

subnet-prefix : fe:80:00:00:00:00:00:00
type : node
node-guid : 00:05:ad:00:00:01:0c:19
```

### Related Commands

- `show route-around`, page 5-34
config route-around port

To create or delete a route-around entry for a port, use the `config route-around port` command.

```
config route-around port {create | delete} node-guid port
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>create</code></td>
<td>Creates a route-around entry for a port.</td>
</tr>
<tr>
<td><code>delete</code></td>
<td>Deletes a route-around entry for a port.</td>
</tr>
<tr>
<td><code>node-guid</code></td>
<td>Specifies the GUID of the node for which you create or delete a route-around entry.</td>
</tr>
<tr>
<td><code>port</code></td>
<td>Specifies a port for which you create or delete a route-around entry.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command creates or deletes a route-around entry for a port.

**Examples**

```
ib_sm> config route-around port create 00:05:ad:00:00:01:0c:19 6
ib_sm> show route-around
```

```
------------------------------------------------------------
All Route-Around entries
------------------------------------------------------------
subnet-prefix: fe:80:00:00:00:00:00:00
type: port
node-guid: 00:05:ad:00:00:01:0c:19
port-num: 6
```

**Related Commands**

`show route-around`, page 5-34
**config sa-mad-queue-depth**

To configure the depth of the kernel MAD queue for incoming SA requests, use the `config sa-mad-queue-depth` command.

```
config sa-mad-queue-depth integer
```

**Syntax Description**

| integer | Specifies the queue depth. |

**Defaults**

This value defaults to 256.

**Usage Guidelines**

This command configures the depth of the kernel MAD queue requested by the Subnet Manager for incoming SA MADs.

*Note*

This command is not applicable to HSM on OFED.

**Examples**

```
ib_sm> config sa-mad-queue-depth 512
ib_sm> show config

================================================================================
Subnet Manager Configuration
================================================================================

subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:ff
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
master-poll-interval(sec) : 5
master-poll-retries : 3
max-active-sms : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hoqlife : 15
cs-link-hoqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : v10-vl17
ib_sm> config wait-report-response false
```
config sa-mad-queue-depth

Related Commands  
show config, page 5-3
config sl-vl-mapping oper-vl add

**Note**  The QoS feature must be enabled in the Subnet Manager before you can configure the sl-vl-mapping profiles.

To specify the mapping of SLs to VLs in the subnet, use the `config sl-vl-mapping oper-vl add` command.

```
config sl-vl-mapping oper-vl val add sl :vl
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>val</td>
<td>Specifies the Operational VL value of the profile.</td>
</tr>
<tr>
<td>sl</td>
<td>Specifies the service level value.</td>
</tr>
<tr>
<td>vl</td>
<td>Specifies the virtual lane value.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command adds/updates an entry in the SL-to-VL mapping profile that is associated with an operational-vl value.

**Note**  Profiles that are configured in the Subnet Manager with the `add` command are not applied to the subnet until they are explicitly committed with the `apply` command.

SL-to-VL-mapping profiles can be provisioned in the Subnet Manager for any valid Operational VL value. The SL-to-VL-mapping profile tables that are programmed at a port are determined by the PortInfo:OperationalVL value.

If QoS is enabled and user-provisioned SL-to-VL-mapping profiles are not available, the Subnet Manager will configure the SL-to-VL-mapping tables of every active port in the subnet so that each of the 0-15 SLs are mapped in a round-robin fashion to the VLs that are operational at the port.

Because of the default SL-to-VL mapping behavior available when the the QoS feature is enabled, you do not need to provision sl-vl-mapping profiles to bring up the fabric. However, when overriding the default behavior, you should plan your SL/VL management strategy carefully, especially if the IB fabric does not have uniform VL capabilities. Proper planning and implementation enables the subnet to function properly and aids in overall fabric performance.

See the InfiniBand Specification, Volume 1 from the IBTA website for details about the SL-to-VL mapping framework.
**Examples**

In a subnet with 8 data VLs, the command sequence below isolates traffic marked for SL0 from the rest of the traffic by mapping it exclusively on to VL0.

```plaintext
ib_sm> config sl-vl-mapping oper-vl 4 add 0:0
ib_sm> config sl-vl-mapping oper-vl 4 add 1:1
ib_sm> config sl-vl-mapping oper-vl 4 add 2:2
ib_sm> config sl-vl-mapping oper-vl 4 add 3:3
ib_sm> config sl-vl-mapping oper-vl 4 add 4:4
ib_sm> config sl-vl-mapping oper-vl 4 add 5:5
ib_sm> config sl-vl-mapping oper-vl 4 add 6:6
ib_sm> config sl-vl-mapping oper-vl 4 add 7:7
ib_sm> config sl-vl-mapping oper-vl 4 add 8:8
ib_sm> config sl-vl-mapping oper-vl 4 add 9:9
ib_sm> config sl-vl-mapping oper-vl 4 add 10:10
ib_sm> config sl-vl-mapping oper-vl 4 add 11:11
ib_sm> config sl-vl-mapping oper-vl 4 add 12:12
ib_sm> config sl-vl-mapping oper-vl 4 add 13:13
ib_sm> config sl-vl-mapping oper-vl 4 add 14:14
ib_sm> config sl-vl-mapping oper-vl 4 add 15:15
ib_sm> config sl-vl-mapping oper-vl 4 apply
```

**Related Commands**

- config sl-vl-mapping oper-vl apply, page 3-59
- config sl-vl-mapping oper-vl delete, page 3-60
- show sl-vl-mapping, page 5-36
- show sl-vl-mapping-config, page 5-37
**Syntax Description**

| val | Specifies the Operational VL value of the profile. |

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command applies the mapping of SLs to VLs in the subnet. SL-to-VL mapping profiles provisioned in the Subnet Manager with the `config sl-vl-mapping oper-vl val add` command are not applied to the subnet until they are explicitly committed with the `apply` command. This command commits a pending SL-to-VL mapping profile, triggering the Subnet Manager to apply the changes to all eligible (active) ports in the subnet.

**Examples**

```
ib_sm> config sl-vl-mapping oper-vl 4 add 0:0
ib_sm> config sl-vl-mapping oper-vl 4 add 1:1
ib_sm> config sl-vl-mapping oper-vl 4 add 2:2
ib_sm> config sl-vl-mapping oper-vl 4 add 3:3
ib_sm> config sl-vl-mapping oper-vl 4 add 4:4
ib_sm> config sl-vl-mapping oper-vl 4 add 5:5
ib_sm> config sl-vl-mapping oper-vl 4 add 6:6
ib_sm> config sl-vl-mapping oper-vl 4 add 7:7
ib_sm> config sl-vl-mapping oper-vl 4 add 8:8
ib_sm> config sl-vl-mapping oper-vl 4 add 9:9
ib_sm> config sl-vl-mapping oper-vl 4 add 10:10
ib_sm> config sl-vl-mapping oper-vl 4 add 11:11
ib_sm> config sl-vl-mapping oper-vl 4 add 12:12
ib_sm> config sl-vl-mapping oper-vl 4 add 13:13
ib_sm> config sl-vl-mapping oper-vl 4 add 14:14
ib_sm> config sl-vl-mapping oper-vl 4 add 15:15
ib_sm> config sl-vl-mapping oper-vl 4 apply
```

**Related Commands**

- `config sl-vl-mapping oper-vl add`, page 3-57
- `config sl-vl-mapping oper-vl delete`, page 3-60
- `show sl-vl-mapping`, page 5-36
- `show sl-vl-mapping-config`, page 5-37
To delete an SL to VL mapping profile in the subnet, use the `config sl-vl-mapping oper-vl delete` command.

```
config sl-vl-mapping oper-vl val delete
```

**Syntax Description**

```
val          Specifies the Operational VL value of the profile.
```

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command deletes an existing user provisioned SL-to-VL mapping profile. The Subnet Manager has built-in SL-to-VL mapping tables. When a profile is deleted, ports affected are automatically reprogrammed with the built-in default SL-to-VL mapping tables. The Subnet Manager has a built-in SL-to-VL mapping scheme that includes a round robin of the 16 SLs to the VLs that are operational at a port.

**Examples**

```
ib_sm> config sl-vl-mapping oper-vl 4 delete
```

**Related Commands**

- `config sl-vl-mapping oper-vl add`, page 3-57
- `config sl-vl-mapping oper-vl apply`, page 3-59
- `show sl-vl-mapping`, page 5-36
- `show sl-vl-mapping-config`, page 5-37
config sm-key

To configure the sm-key of the Subnet Manager, use the `config sm-key` command.

```plaintext
config sm-key key
```

### Syntax Description

| key | Specifies a unique identifier in the format nn:nn. |

### Defaults

This value defaults to 00:00:00:00:00:00:00:00 (8 bytes).

### Usage Guidelines

This Subnet Manager key is a value used by Subnet Managers in a network to validate one another.

### Examples

```plaintext
ib_sm> config sm-key 00:00:00:00:00:00:00:ff
ib_sm> show config
```

```
================================================================================
Subnet Manager Configuration
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:00:ff
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
master-poll-interval(sec) : 5
master-poll-retries : 3
max-active-smss : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hoqlife : 15
ca-link-hoqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : vl0-vl7
```

### Related Commands

- `show config`, page 5-3
To configure a Switched Port Analyzer (SPAN), use the `config span` command.

```
config span {create | delete} src-node-guid src-port dst-node-guid dst-port
```

### Syntax Description

<table>
<thead>
<tr>
<th>Command</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>create</td>
<td>Configures a SPAN.</td>
</tr>
<tr>
<td>delete</td>
<td>Deletes a SPAN.</td>
</tr>
<tr>
<td>src-node-guid</td>
<td>Specifies the GUID of the source node.</td>
</tr>
<tr>
<td>src-port</td>
<td>Specifies the source port.</td>
</tr>
<tr>
<td>dst-node-guid</td>
<td>Specifies GUID of the destination node.</td>
</tr>
<tr>
<td>dst-port</td>
<td>Specifies the destination port.</td>
</tr>
</tbody>
</table>

### Defaults

This command has no defaults.

### Usage Guidelines

This command configures a SPAN. A SPAN mirrors the traffic ingressing a port and routes it to a destination port at a specified node. The destination port must be on the same node as the source port.

### Examples

```
ib_sm> config span create 00:05:ad:00:00:00:18:5d 17 00:05:ad:00:00:00:18:5d 19
ib_sm> show span

============================================================================
All Spanning entries
============================================================================
src-node-guid : 00:05:ad:00:00:00:18:5d
src-port : 17
dst-node-guid : 00:05:ad:00:00:00:18:5d
dst-port : 19
state : active
state-detail : none

ib_sm> show span -s

============================================================================
All Spanning entries
============================================================================
src-node-guid        src-port  dst-node-guid        dst-port  state
============================================================================
00:05:ad:00:00:00:18:5d  17        00:05:ad:00:00:00:18:5d  19        active
```

### Related Commands

- `show span`, page 5-38
config sweep-interval

To configure how frequently the Subnet Manager sweeps an unchanging subnet, use the config sweep-interval command.

**config sweep-interval seconds**

**Syntax Description**

| seconds | Specifies the sweep interval, in seconds. |

**Defaults**

The value defaults to 10 seconds.

**Usage Guidelines**

This command configures how frequently the Subnet Manager resweeps an unchanging subnet. The default is to delay 10 seconds between sweeps, unless a change occurs that causes the Subnet Manager to resweep immediately.

**Examples**

```
ib_sm> config sweep-interval 15
ib_sm> show config
```

```
================================================================================
Subnet Manager Configuration
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 12
sm-key : 00:00:00:00:00:00:00:ff
oper-status : master
act-count : 17975
sweep-interval(sec) : 15
response-timeout(msec) : 250
mad-retries : 7
node-timeout : 60
master-poll-interval(sec) : 5
master-poll-retries : 3
max-active-sms : 2
LID-mask-control : 2
switch-life-time : 15
sw-link-hoqlife : 15
cq-link-hoqlife : 15
max-hops : 5
wait-report-response : true
sa-mad-queue-depth : 512
local-node-retries : 20
qos-admin-state : enabled
max-operational-vl : auto-subnet
min-vl-cap-detected : v10-v17
```
**config switch-life-time**

To configure the Switch Lifetime Limit on all switches in the subnet, use the `config switch-life-time` command.

```
config switch-life-time value
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>value</code></td>
<td>Specifies the SLL (SwitchLifetimeLimit), which is defined as 4.096us * (2^{\text{value}}). This integer value represents the power to which 2 is raised.</td>
</tr>
</tbody>
</table>

**Defaults**

This command defaults to 18 (discard after approximately one second).

**Usage Guidelines**

This command configures the SwitchLifetimeLimit on all switches in the subnet. This configuration controls how long a packet is allowed to live in a switch before being discarded. The default value of 18 causes packets to be discarded after approximately one second.

For detailed information about the lifetime value, see the InfiniBand specification on the IBTA website.

**Examples**

```
ib_sm> config switch-life-time 15
ib_sm> show switch
```

```
================================================================================
Subnet Management Switches
================================================================================
  subnet-prefix : fe:80:00:00:00:00:00:00
  node-guid : 00:05:ad:00:00:01:60:04
  linear-fdb-cap : 49152
  random-fdb-cap : 0
  mcast-fdb-cap : 1024
  linear-fdb-top : 10240
  default-port : 0
  def-pri-mcast-port : 255
  def-non-pri-mcast-port : 255
  life-time-value : 15
  port-state-change : 1
  lids-per-port : 0
  partition-enf-cap : 32
  in-enf-cap : 1
  out-enf-cap : 1
  in-filter-raw-pkt-cap : 1
  out-filter-raw-pkt-cap : 1
  enhanced-port-0 : no
```

**Related Commands**

- `show config`, page 5-3
- `show switch`, page 5-40
To configure the Head of Queue Lifetime for switch ports that are attached to other switch ports, use the `config sw-link-hoqlife` command.

```
config sw-link-hoqlife value
```

**Syntax Description**

<table>
<thead>
<tr>
<th>parameter</th>
<th>description</th>
</tr>
</thead>
<tbody>
<tr>
<td>value</td>
<td>Specifies an integer value of the Head of Queue Lifetime Limit, which is</td>
</tr>
<tr>
<td></td>
<td>defined as 4.096us * 2^LV. This integer value represents the power to which</td>
</tr>
<tr>
<td></td>
<td>2 is raised.</td>
</tr>
</tbody>
</table>

**Defaults**

This value defaults to 18.

**Usage Guidelines**

This command configures the HeadOfQueue Lifetime for switch ports that are attached to other switch ports in the network. This value specifies how long a packet will live at the front of a port queue before being discarded. The default value of 18 means that packets will be discarded after approximately one second. This lifetime is linked to the ca-link-hoqlife.

For detailed information on head-of-queue lifetimes, see the InfiniBand specification on the IBTA website.

**Examples**

```
ib_sm> config sw-link-hoqlife 15
ib_sm> show config
```

```bash
Subnet Manager Configuration
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
        guid : 00:05:ad:00:00:04:e5:25
        priority : 12
        sm-key : 00:00:00:00:00:00:ff
        oper-status : master
        act-count : 17975
        sweep-interval(sec) : 15
        response-timeout(msec) : 250
        mad-retries : 7
        node-timeout : 60
        master-poll-interval(sec) : 5
        master-poll-retries : 3
        max-active-smms : 2
        LID-mask-control : 2
        switch-life-time : 15
        sw-link-hoqlife : 15
        ca-link-hoqlife : 15
        max-hops : 5
        wait-report-response : true
        sa-mad-queue-depth : 512
        local-node-retries : 20
        qos-admin-state : enabled
        max-operational-vl : auto-subnet
        min-vl-cap-detected : vl0-vl7
```
Related Commands: show config, page 5-3
config trace

To configure logging on the HSM, use the `config trace` command.

```
config trace level flowmask
```

### Syntax Description

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>level</strong></td>
<td>Specifies the level of verbosity of the trace messages. A higher level means that the trace message is more verbose; a lower level means that the trace message is less verbose.</td>
</tr>
<tr>
<td><strong>flowmask</strong></td>
<td>Specifies a number that represents type of tracing to enable.</td>
</tr>
</tbody>
</table>

### Defaults

This command has no default settings.

### Usage Guidelines

This command configures the Subnet Manager logging. An especially useful level of logging when problems arise is “config trace 2 0x1000” which is terse logging of generic IB events.

### Examples

```
config trace 2 0x1000
```

### Related Commands

None.
config vl-arbitration add

Note
The QoS feature must be enabled in the Subnet Manager before you can configure the vl-arbitration profiles.

To manage the vl-arbitration table profiles in the subnet, use the config vl-arbitration add command.

```
config vl-arbitration add [-e block priority | index | vl | weight] [-l high-limit-value] [-n node-guid [-p port-num]]
```

Syntax Description
- **-e** (Optional) Specifies an entry in the arbitration table.
  
  **block priority** (Optional) Specifies an arbitration table block value.
  
  **index** (Optional) Specifies the index within a block.
  
  **vl** (Optional) Specifies a VL value.
  
  **weight** (Optional) Specifies a weight value.
  
  **-l** (Optional) Specifies a high limit value.
  
  **high-limit-value** (Optional) Specifies a high limit value.
  
  **-n** (Optional) Displays the arbitration tables for the ports of a given node.
  
  **node-guid** (Optional) Specifies a node.
  
  **-p** (Optional) Displays the arbitration table for the given port.
  
  **port-num** (Optional) Specifies a port.

Defaults
This command has no default settings.

Usage Guidelines
This command adds/updates an entry in a VL arbitration profile. Profiles can be provisioned with the scope of “subnet,” “node,” or “port.” A “subnet” scoped profile is used to provision VL arbitration tables and vl-high-limit values of ports that do not have a matching profile at the “node” or “port” scope.

If the [-n node-guid [-p port-num]] option(s) are omitted, the scope of the profile being manipulated is the “subnet.”

Note
Profiles configured in the Subnet Manager with the add command are not applied to the subnet until they are explicitly committed with the apply command.

If QoS is enabled and user-provisioned arbitration profiles are not available, Subnet Manager will configure every active port with a round robin VL arbitration scheme that is equally weighted and prioritized (low).

The scenarios in which it is necessary to provision vl-arbitration profiles are governed primarily by the type and load of traffic flowing in the fabric.
When the QoS feature is enabled in the Subnet Manager, you do not need to provision vt arbitration profiles to bring up the fabric due to the built-in default behavior. However, when overriding the built-in behavior, you should plan your SL/VL management strategy carefully, especially if the IB fabric does not have uniform VL capabilities. Proper planning and implementation enables the subnet to function properly and aids in overall fabric performance.

**Examples**

The command sequence below shows an example of modifying the subnet vl-arbitration scheme to a pre-emptive, weighted, fair scheme, with VL0 prioritized higher than the rest of the data VLs:

```
ib_sm> config vl-arbitration add -l 2
ib_sm> config vl-arbitration add -e 3:0:0:1
ib_sm> config vl-arbitration add -e 1:0:1:1
ib_sm> config vl-arbitration add -e 1:1:2:1
ib_sm> config vl-arbitration add -e 1:2:3:1
ib_sm> config vl-arbitration add -e 1:3:4:1
ib_sm> config vl-arbitration add -e 1:4:5:1
ib_sm> config vl-arbitration add -e 1:5:6:1
ib_sm> config vl-arbitration add -e 1:6:7:1
ib_sm> config vl-arbitration apply
```

**Related Commands**

- `config vl-arbitration apply`, page 3-70
- `config vl-arbitration delete`, page 3-71
- `show vl-arbitration`, page 5-42
- `show vl-arbitration-config`, page 5-44
config vl-arbitration apply

To apply the vl-arbitration table profiles in the subnet, use the `config vl-arbitration apply` command.

**Note**
Profiles configured in the Subnet Manager with the `add` command are not applied to the subnet until they are explicitly committed with the `apply` command.

```
config vl-arbitration apply [-n node-guid [-p port-num]]
```

**-n** (Optional) Specifies the arbitration tables for the ports of a given node.

**node-guid** (Optional) Specifies a node.

**-p** (Optional) Specifies the arbitration table for the given port.

**port-num** (Optional) Specifies a port number.

**Defaults**
This command has no default settings.

**Usage Guidelines**
If the `-n node-guid [-p num]` option(s) are omitted, the scope of the profile being manipulated is the “subnet.”

VL arbitration profiles provisioned in the Subnet Manager with the `config vl-arbitration add` command are not applied to the subnet until they are explicitly committed with the `apply` command. This command commits a pending VL arbitration profile, triggering the Subnet Manager to apply the changes to all eligible (active) ports in the subnet.

**Examples**
```
ib_sm> config vl-arbitration add -l 2
ib_sm> config vl-arbitration add -e 3:0:0:1
ib_sm> config vl-arbitration add -e 1:0:1:1
ib_sm> config vl-arbitration add -e 1:1:2:1
ib_sm> config vl-arbitration add -e 1:2:3:1
ib_sm> config vl-arbitration add -e 1:3:4:1
ib_sm> config vl-arbitration add -e 1:4:5:1
ib_sm> config vl-arbitration add -e 1:5:6:1
ib_sm> config vl-arbitration add -e 1:6:7:1
```

**Related Commands**
- `config vl-arbitration add`, page 3-68
- `config vl-arbitration delete`, page 3-71
- `show vl-arbitration`, page 5-42
- `show vl-arbitration-config`, page 5-44
config vl-arbitration delete

To delete the vl-arbitration table profiles in the subnet, use the `config vl-arbitration delete` command.

```
config vl-arbitration delete [-n node-guid [-p port-num]]
```

**Syntax Description**

- `-n` Specifies the arbitration tables for the ports of a given node.
- `node-guid` Specifies a node.
- `-p` Specifies the arbitration table for the given port.
- `port-num` Specifies a port.

**Defaults**

This command has no default settings.

**Usage Guidelines**

If the `-n node-guid [-p num]` option(s) are omitted, the scope of the profile being manipulated is the “subnet.”

This command deletes an existing user provisioned VL arbitration profile. When a profile is deleted, ports affected are automatically re-programmed with an alternative user provisioned matching profile or with the VL arbitration tables that are built-in with the Subnet Manager. The built-in tables employ a round robin VL arbitration scheme that is equally weighted and equally (low) prioritized across all the VLs operational at a port.

**Examples**

```
ib_sm> config vl-arbitration delete
```

**Related Commands**

- `config vl-arbitration add`, page 3-68
- `config vl-arbitration apply`, page 3-70
- `show vl-arbitration`, page 5-42
- `show vl-arbitration-config`, page 5-44
**config wait-report-response**

To specify the behavior of the Subnet Manager when forwarding events to subscribers, use the `config wait-report-response` command.

```
config wait-report-response { true | false }
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>true</th>
<th>false</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Configures the Subnet Manager to resend events until it receives a response from a subscriber.</td>
<td>Configures the Subnet Manager to generate a report once per event subscriber.</td>
</tr>
</tbody>
</table>

**Defaults**

This value defaults to false.

**Usage Guidelines**

This command configures the Subnet Manager behavior when forwarding events to subscribers. If set to “true,” the Subnet Manager resends events until it receives a `SubnAdmReportResp()` from a subscriber. If set to “false,” (default) it generates only the `SubnAdmReport()` once per event subscriber.

**Examples**

```
ib_sm> show config
==============================================================================
Subnet Manager Configuration
==============================================================================
  subnet-prefix : fe:80:00:00:00:00:00:00
  guid : 00:05:ad:00:00:04:e5:25
  priority : 11
  sm-key : 00:00:00:00:00:00:00:00
  oper-status : master
  act-count : 3319
  sweep-interval(sec) : 10
  response-timeout(msec) : 200
  mad-retries : 5
  node-timeout : 10
  master-poll-interval(sec) : 3
  master-poll-retries : 2
  max-active-sms : 0
  LID-mask-control : 0
  switch-life-time : 18
  sw-link-hoqlife : 18
  ca-link-hoqlife : 18
  max-hops : 64
  wait-report-response : false
  sa-mad-queue-depth : 256
  local-node-retries : 10
  qos-admin-state : disabled
  max-operational-vl : auto-link
  min-vl-cap-detected : vl0-v17
ib_sm> config wait-report-response false
```

**Related Commands**

`show config`, page 5-3
Performance Management Commands

This chapter describes commands related to the Cisco Performance Management (PM) feature, but it does not include every Performance Management-related command. Commands that configure the PM feature appear in the “Configure Commands” chapter. Commands that display PM configuration output appear in the “Show Commands” chapter. The commands in this chapter represent the PM commands that do not overlap with the other chapters.

This chapter includes the following commands:

- pm reset connection counters, page 4-2
- pm reset counters, page 4-3
- pm test connection, page 4-5
pm reset connection counters

To reset all port counters along a specified connection, use the `pm reset connection counters` command.

```
pm reset connection counters src-lid dst-lid
```

**Syntax Description**

<table>
<thead>
<tr>
<th>src-lid</th>
<th>Specifies the source Logical ID of the connection.</th>
</tr>
</thead>
<tbody>
<tr>
<td>dst-lid</td>
<td>Specifies the destination Logical ID of the connection.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

None.

**Examples**

```
ib_sm> pm reset connection counters 904 888
....
Counter reset succeeded.
```

**Related Commands**

`show pm port counters`, page 5-27
# pm reset counters

To reset port counters, use the `pm reset counters` command.

```
pm reset counters [-n guid [-p port]]
```

## Syntax Description

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-n guid</code></td>
<td>Resets counters for one node only. Specifies a node.</td>
</tr>
<tr>
<td><code>-p port</code></td>
<td>Resets counters for one port only. Specifies a port.</td>
</tr>
</tbody>
</table>

## Defaults

This command has no default settings.

## Usage Guidelines

This command resets all the port counters in the IB subnet, or only the ports on a specified node, or only the specified port. Note that during the delay between resetting the counters and showing the cumulative counters, some ports had activity, which is why the values for some xmit and recv counters are non-zero in the example output.

## Examples

```
ib_sm> pm reset counters
.
Counter reset succeeded.
ib_sm> show pm cumulative counters -n 00:05:ad:00:00:01:60:04
```

```plaintext
================================================================================
All PM Cumulative Port Counters for specified node
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:01:60:04
port-num : 1
chassis-guid : 00:05:ad:03:00:01:60:04
slot-num : 1
ext-port-num : 1
data-is-valid : true
error-status : not exceeded
utilization-status : not exceeded
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
crc-errors : 0
crc-remote-phy-errors : 0
crc-switch-relay-errors : 0
xmit-discards : 0
xmit-constraint-errors : 0
crc-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 0
xmit-data : 6624
crc-data : 6624
xmit-pkts : 92
```
pm reset counters

rcv-pkts : 92
xmit-rate : 0 %
rcv-rate : 0 %

subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:01:60:04
port-num : 2
chassis-guid : 00:05:ad:03:00:01:60:04
slot-num : 1
ext-port-num : 2
data-is-valid : true
error-status : not exceeded
utilization-status : not exceeded
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-droppeds : 0
xmit-data : 0
rcv-data : 0
xmit-pkts : 0
rcv-pkts : 0
xmit-rate : 0 %
rcv-rate : 0 %

subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:01:60:04
port-num : 5
chassis-guid : 00:05:ad:03:00:01:60:04
slot-num : 1
ext-port-num : 5
data-is-valid : true
error-status : not exceeded
utilization-status : not exceeded
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-droppeds : 0
xmit-data : 432
rcv-data : 432
xmit-pkts : 6
rcv-pkts : 6
xmit-rate : 0 %
rcv-rate : 0 %

Related Commands

show pm monitored ports, page 5-25
pm test connection

To test the connection between a given source LID and a given destination LID, use the pm test connection command.

    pm test connection src-lid dst-lid

**Syntax Description**

<table>
<thead>
<tr>
<th>src-lid</th>
<th>Specifies the source Logical ID of the connection.</th>
</tr>
</thead>
<tbody>
<tr>
<td>dst-lid</td>
<td>Specifies the destination Logical ID of the connection.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command tests the connection between the given source LID and destination LID. This test is done by discovering an intermediate switch along the path from source to destination and by having the switch send a test packet to both source and destination. If it succeeds, the path from source to destination is good.

**Examples**

(This example shows that the path from the source port to the destination port is good.)

ib_sm> pm test connection 904 888
.
Connection test succeeded.

**Related Commands**

None.
pm test connection
Show Commands

This chapter includes the following commands:

- `show config`, page 5-3
- `show db-sync`, page 5-4
- `show lft`, page 5-6
- `show mft`, page 5-7
- `show multicast`, page 5-8
- `show neighbor`, page 5-10
- `show node`, page 5-12
- `show other-sm`, page 5-13
- `show partition`, page 5-14
- `show pm connection counters`, page 5-16
- `show pm connection monitors`, page 5-19
- `show pm cumulative counters`, page 5-20
- `show pm cumulative error counters`, page 5-22
- `show pm monitor config`, page 5-24
- `show pm monitored ports`, page 5-25
- `show pm port counter access`, page 5-26
- `show pm port counters`, page 5-27
- `show pm threshold`, page 5-30
- `show port`, page 5-31
- `show route`, page 5-32
- `show route-around`, page 5-34
- `show service`, page 5-35
- `show sl-vl-mapping`, page 5-36
- `show sl-vl-mapping-config`, page 5-37
- `show span`, page 5-38
- `show subscription`, page 5-39
- `show switch`, page 5-40
- show version, page 5-41
- show vl-arbitration, page 5-42
- show vl-arbitration-config, page 5-44
**show config**

To display the current values of various tunable subnet manager parameters and the current state of the Subnet Manager, use the `show config` command.

`show config`

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to view the results of the configuration commands that you use and to view the current state of the subnet manager.

**Examples**

```
ib_sm> show config
```

```
==============================================================================
Subnet Manager Configuration
==============================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
guid : 00:05:ad:00:00:04:e5:25
priority : 11
sm-key : 00:00:00:00:00:00:00:00
oper-status : master
act-count : 3319
sweep-interval(sec) : 10
response-timeout(msec) : 200
mad-retries : 5
node-timeout : 10
master-poll-interval/sec) : 3
master-poll-retries : 2
max-active-sms : 0
LID-mask-control : 0
switch-life-time : 18
sw-link-hoqlife : 18
cm-link-hoqlife : 18
max-hops : 64
wait-report-response : false
sa-mad-queue-depth : 256
local-node-retries : 10
qos-admin-state : disabled
max-operational-vl : auto-link
min-vl-cap-detected : vl0-v17
```

**Related Commands**

This command relates to many commands in the **Configure Commands** chapter.
show db-sync

To display the current configuration and status of the database synchronization (db-sync) feature, use the 
show db-sync command.

    show db-sync [sm-list]

**Syntax Description**

| sm-list | (Optional) Displays the list of all standby subnet managers that are selected 
| to synchronize with the master subnet manager. |

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to determine the status and control parameters of the Database Synchronization 
feature.

**Examples**

    ib_sm> show db-sync

    DB Sync Configuration and Status
    protocol-version : 25
    admin-state : enabled
    max-dbsync-sm : 1
    session-timeout(sec) : 10
    poll-interval(sec) : 3
    cold-sync-timeout(sec) : 10
    cold-sync-limit : 2
    cold-sync-period(sec) : 900
    new-session-delay(sec) : 120
    resync-interval(sec) : 3600
    state : not in-sync

    ib_sm> show db-sync sm-list

    DB Synchronizing SMs
    port-guid : 00:05:ad:00:00:01:29:ab
    entry-state : active
    session-state : active
    session-timeout-current(sec) : 10
    poll-interval-current(sec) : 3
    new-session-delay-current(sec) : 120
    resync-interval-current(sec) : 3027
    state : in-sync

**Related Commands**

config db-sync cold-sync-limit, page 3-4
config db-sync cold-sync-period, page 3-5
config db-sync cold-sync-timeout, page 3-6
config db-sync disable, page 3-7
config db-sync enable, page 3-8
config db-sync max-dbsync-sms, page 3-9
config db-sync new-session-delay, page 3-10
config db-sync poll-interval, page 3-11
config db-sync resync-interval, page 3-12
config db-sync session-timeout, page 3-13
show lft

To display the contents of the linear forwarding tables on switches in the subnet, use the show lft command.

```
show lft [-n guid] [-l lid] [-q]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-n</td>
<td>(Optional) Displays only the linear forwarding table for the switch with the specified GUID.</td>
</tr>
<tr>
<td>guid</td>
<td>(Optional) Specifies a switch.</td>
</tr>
<tr>
<td>-l</td>
<td>(Optional) Displays only the linear forwarding table for the specified LID.</td>
</tr>
<tr>
<td>lid</td>
<td>(Optional) Specifies a LID.</td>
</tr>
<tr>
<td>-q</td>
<td>(Optional) Queries actual switches in the network and shows the result instead of displaying the internal cached copy of the data in the Subnet Manager.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to view the linear forwarding table for each switch node.

**Examples**

```
ib_sm> show lft
```

```
================================================================================
Linear Forwarding Table
================================================================================
node-guid       lid    port
---------       ---    ----
00:05:ad:00:00:01:60:04  2      0
00:05:ad:00:00:01:60:04  3      1
00:05:ad:00:00:01:60:04 889     18
00:05:ad:00:00:01:60:04 897     17
00:05:ad:00:00:01:60:04 905     5
00:05:ad:00:00:01:60:04 913     6
```

**Related Commands**

show node, page 5-12
show mft

To display the multicast forwarding tables on switches in the subnet, use the `show mft` command.

```
show mft [-n guid] [-l mlid] [-q]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-n</code></td>
<td>(Optional) Displays only the MFT for the switch with the specified GUID. guid</td>
</tr>
<tr>
<td><code>-l</code></td>
<td>(Optional) Displays only the MFT for the specified multicast LID. mlid</td>
</tr>
<tr>
<td><code>-q</code></td>
<td>(Optional) Queries the actual switches in the network and shows the results instead of displaying the copy of the data cached internally in the Subnet Manager.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to view the multicast forwarding table for each switch node.

**Examples**

```
ib_sm> show mft
```

```
=================================================================================================
Multicast Forwarding Table
=================================================================================================
node-guid         mlid         port-mask(0, 1, 2 ...)
----------------- ---- ----------------------
00:05:ad:00:00:01:60:04 49152 0x60 0x4
00:05:ad:00:00:01:60:04 49153 0x60 0x4
```

**Related Commands**

- `show node`, page 5-12
show multicast

To display the multicast groups in the subnet, use the **show multicast** command.

```
show multicast [-s] [-m gid]
```

### Syntax Description

- **-s** (Optional) Displays only a summary for each multicast group. The summary includes group details but not group members.

- **-m** (Optional) Displays only the multicast group specified by `gid`.

- **gid** (Optional) Specifies the Global ID of the multicast group to display.

### Defaults

This command has no default settings.

### Usage Guidelines

Use this command to view the multicast groups in the subnet.

### Examples

```
ib_sm> show multicast
```

```
================================================================================
All Multicast Groups
================================================================================

subnet-prefix : fe:80:00:00:00:00:00:00
mgid : ff:12:40:1b:ff:ff:00:00:00:00:00:00:ff:ff:ff:ff
q-key : 00:00:00:0b
mlid : 49153
mtu : 2048
t-class : 0
p_key : ff:ff
rate : 2500 mbps
packet-life-time : 2
sl : 0
flow-label : 00:00:00
hop-limit : 0
scope : link-local
user-configured : false

multicast-group-members :
    port-gid : fe:80:00:00:00:00:00:00:00:05:ad:00:00:04:e5:1d
    join-state : full-member
    proxy-join : false

    port-gid : fe:80:00:00:00:00:00:00:00:05:ad:00:00:04:e5:25
    join-state : full-member
    proxy-join : false

    port-gid : fe:80:00:00:00:00:00:00:00:05:ad:00:00:04:e5:65
    join-state : full-member
    proxy-join : false

subnet-prefix : fe:80:00:00:00:00:00:00
mgid : ff:12:40:1b:ff:ff:00:00:00:00:00:ff:ff:ff
q-key : 00:00:00:0b
```

- **-s** (Optional) Displays only a summary for each multicast group. The summary includes group details but not group members.

- **-m** (Optional) Displays only the multicast group specified by `gid`.

- **gid** (Optional) Specifies the Global ID of the multicast group to display.
show multicast

mlid : 49152  
mtu : 2048  
t-class : 0  
p_key : ff:ff  
rate : 2500 mbps  
packet-life-time : 2  
sl : 0  
flow-label : 00:00:00  
hop-limit : 0  
scope : link-local  
user-configured : false  

multicast-group-members :  
  port-gid : fe:80:00:00:00:00:00:00:00:05:ad:00:00:04:e5:1d  
  join-state : full-member  
  proxy-join : false  
  
  port-gid : fe:80:00:00:00:00:00:00:00:05:ad:00:00:04:e5:25  
  join-state : full-member  
  proxy-join : false  
  
  port-gid : fe:80:00:00:00:00:00:00:00:05:ad:00:00:04:e5:65  
  join-state : full-member  
  proxy-join : false  

Related Commands  
config multicast-group-ib create, page 3-25  
config multicast-group-ib delete, page 3-27  
config multicast-group-ipoib create, page 3-28  
config multicast-group-ipoib delete, page 3-30
show neighbor

To display the neighbors in the subnet so that you can describe the physical topology of the subnet, use the show neighbor command.

In an InfiniBand fabric, neighbors are two ports connected by a link.

```
show neighbor [-s] [-c [chassis_guid]] [-n node_guid]
```

**Syntax Description**

- `[-s]` (Optional) Displays a summary line per neighbor.
- `[-c]` (Optional) Displays inter-chassis links only.
- `chassis_guid` (Optional) Specifies the specific chassis to display.
- `[-n]` (Optional) Displays only links that connect to a given node.
- `node_guid` (Optional) Specifies the node to display.

**Note**

A chassis GUID is the unique GUID that identifies a chassis. It is based on the system image GUID of any switch node inside the chassis, with the fifth byte zeroed.

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to determine which devices directly connect to one another.

If the [-c [chassis-guid]] option is given, only inter-chassis links are shown.

**Examples**

```
ib_sm> show neighbor
================================================================================
Subnet Management Neighbor List
================================================================================
local-node-guid : 00:05:ad:00:00:01:60:04
local-node-type : switch
local-port : 5
remote-node-guid : 00:05:ad:00:00:04:e5:1c
remote-node-type : CA
remote-port : 1
link-state : active

local-node-guid : 00:05:ad:00:00:01:60:04
local-node-type : switch
local-port : 6
remote-node-guid : 00:05:ad:00:00:04:e5:64
remote-node-type : CA
remote-port : 1
link-state : active
```

---

**Cisco High-Performance Subnet Manager for InfiniBand Server Switches**

5-10

OL-10811-02
Related Commands

- show node, page 5-12
- show route, page 5-32
show node

To display information about one node in the subnet (a switch, a channel adapter, or a router) or all nodes, use the **show node** command.

```
show node [-s] [-n guid]
```

**Syntax Description**

- `-s` (Optional) Provides a summary line for each node.
- `-n` (Optional) Provides information for only the node with the specified GUID.
- `guid` (Optional) Node GUID, in hexadecimal notation, of the single node to view.

**Defaults**

Shows the node information of all switch, channel adapter, and router nodes discovered in the fabric.

**Usage Guidelines**

Use this command to view the switches and hosts on the network.

**Examples**

```
ib_sm> show node
================================================================================
Subnet Management Nodes
================================================================================
  system-image-guid : 00:05:ad:03:01:01:60:04
  node-guid : 00:05:ad:00:00:01:60:04
  description : Cisco Switch SFS7000
  base-version : 1
  class-version : 1
  type : switch
  num-ports : 24
  port-guid : 00:05:ad:00:00:01:60:04
  partition-cap : 8
  device-id : b924
  revision : 000001a1
  local-portnum : 18
  vendor-id : 00:05:ad
  mirror-capable : slvl-map, mirroring

  system-image-guid : 00:05:ad:00:00:04:e4:4f
  node-guid : 00:05:ad:00:00:04:e4:4c
  description : ibmg-r2-1850-2.cisco.com HCA-1 (Topspin HCAe)
  base-version : 1
  class-version : 1
  type : CA
  num-ports : 2
  port-guid : 00:05:ad:00:00:04:e4:4d
  partition-cap : 64
  device-id : 6278
  revision : 000000a0
  local-portnum : 1
  vendor-id : 00:05:ad
  mirror-capable : no-mirroring
```

**Related Commands**

- `show neighbor`, page 5-10
show other-sm

To display other subnet managers in the subnet, use the `show other-sm` command.

```
show other-sm [-p port-guid] [-s]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-p</code></td>
<td>(Optional) Displays only an Subnet Manager on the specified port.</td>
</tr>
<tr>
<td><code>port-guid</code></td>
<td>(Optional) Displays the 64-bit GUID of the port to which a Subnet Manager is bound.</td>
</tr>
<tr>
<td><code>-s</code></td>
<td>(Optional) Displays a summary of the output.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

When you run this command on the master subnet manager, all other Subnet Managers appear in the output. When you run this command on a standby Subnet Manager, only the master Subnet Manager appears in the output.

**Examples**

```
ib_sm> show other-sm
```

```
Subnet Managers in the subnet
subnet-prefix : fe:80:00:00:00:00:00:00
port-guid : 00:05:ad:00:00:01:60:04
sm-key : 00:00:00:00:00:00:00:00
priority : 10
sm-state : standby
act-count : 97
```

**Related Commands**

- `show config`, page 5-3
- `show db-sync`, page 5-4
- `show node`, page 5-12
show partition

To display the partitions in the subnet, use the `show partition` command.

```
show partition [-s] [-k p_key] [-n guid [-p port]]
```

### Syntax Description

- `-s` (Optional) Displays only a three-line summary for each partition.
- `-k` (Optional) Displays only information on a given partition key.
- `p_key` (Optional) Identifies the partition key to display.
- `-n` (Optional) Displays partition keys only for the node given.
- `guid` (Optional) Identifies the node to display.
- `-p` (Optional) Displays partition keys only for the port given.
- `port` (Optional) Identifies the port to display.

### Defaults

This command has no default settings.

### Usage Guidelines

Use this command to view the partitions on the subnet.

### Examples

```
ib_sm> show partition

================================================================================
All Partitions
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
  p-key : ff:ff
  ipoib : enabled

partition-members :
  node-guid : 00:05:ad:00:00:01:60:04
  port-num : 0
  member-type : full

  node-guid : 00:05:ad:00:00:04:e4:4c
  port-num : 1
  member-type : full

  node-guid : 00:05:ad:00:00:04:e5:1c
  port-num : 1
  member-type : full

```

### Related Commands

- `config partition key`, page 3-32
- `config partition key ipoib`, page 3-34
- `config partition member add`, page 3-36
- `config partition member remove`, page 3-37
config partition member type, page 3-38
show pm connection counters

To display all port counters for ports along a given path, use the show pm connection counters command.

show pm connection counters src-lid dst-lid

Syntax Description

<table>
<thead>
<tr>
<th>src-lid</th>
<th>Specifies the source LID of the path.</th>
</tr>
</thead>
<tbody>
<tr>
<td>dst-lid</td>
<td>Specifies the destination LID of the path.</td>
</tr>
</tbody>
</table>

Defaults

This command has no default settings.

Usage Guidelines

Use this command to display counters on one path.

Examples

ib_sm> show pm connection counters 904 888

PM Port Counters for specified connection

subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:04:e5:1c
port-num : 1
chassis-guid : 00:00:00:00:00:00:00:00
slot-num : 0
ext-port-num : 0
data-is-valid : true
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
xmit-discards : 4
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 0
xmit-data : 4294967295
rcv-data : 4294967295
xmit-pkts : 480740164
rcv-pkts : 482000972

subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:01:60:04
port-num : 5
chassis-guid : 00:05:ad:03:00:01:60:04
slot-num : 1
ext-port-num : 5
data-is-valid : true
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
### show pm connection counters

```
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 2
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 0
  xmit-data : 4294967295
  rcv-data : 4294967295
  xmit-pkts : 481029078
  rcv-pkts : 479773158

subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:01:60:04
port-num : 18
chassis-guid : 00:05:ad:03:00:01:60:04
slot-num : 1
ext-port-num : 18
data-is-valid : true
symbol-errors : 65535
link-recovery-errors : 0
link-downs : 1
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 17
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 0
  xmit-data : 4294967295
  rcv-data : 4294967295
  xmit-pkts : 546524355
  rcv-pkts : 546915528

subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:04:e5:24
port-num : 1
chassis-guid : 00:00:00:00:00:00:00:00
slot-num : 0
ext-port-num : 0
data-is-valid : true
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
xmit-discards : 1
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 2
  xmit-data : 4294967295
  rcv-data : 4294967295
  xmit-pkts : 480573751
  rcv-pkts : 480226164
```
show pm connection counters

Related Commands:  config pm connection monitor, page 3-40
show pm connection monitors

To display the connections that the PM is currently monitoring, use the `show pm connection monitors` command.

```
show pm connection monitors [-s src-lid -d dst-lid]
```

**Syntax Description**

- `-s` (Optional) Displays only monitors from a specified source LID.
- `src-lid` (Optional) Specifies a source LID.
- `-d` (Optional) Displays only monitors from a specified destination LID.
- `dst-lid` (Optional) Specifies a destination LID.

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this display to view monitored connections.

**Examples**

```
ib_sm> show pm connection monitors

================================================================================
All PM Monitored Connections
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
src-lid : 904
dst-lid : 888
error-status : not exceeded
utilization-status : exceeded
port-errors : 0
utilization-errors : 2
port-error : 1
node-guid : 00:05:ad:00:00:04:e5:1c
port-num : 1
chassis-guid : 00:00:00:00:00:00:00:00
slot-num : 0
ext-port-num : 0
error-type : xmit-rate
port-error : 2
node-guid : 00:05:ad:00:00:04:e5:24
port-num : 1
chassis-guid : 00:00:00:00:00:00:00:00
slot-num : 0
ext-port-num : 0
error-type : rcv-rate
```

**Related Commands**

`config pm connection monitor`, page 3-40
show pm cumulative counters

To display the cumulative counters for the monitored ports in the network, use the `show pm cumulative counters` command.

```
show pm cumulative counters [-n guid [-p port]]
```

**Syntax Description**

- `-n` (Optional) Displays counters only for a specified node.
- `guid` (Optional) Specifies a node.
- `-p` (Optional) Displays counters only for a specified port.
- `port` (Optional) Specifies a port.

**Defaults**

This command has no default settings.

**Usage Guidelines**

Unlike the `show pm port counters` command, the cumulative counters do not latch at 32-bits; they are all 64-bit quantities. The counters can be seen on port 5 in the example output.

**Examples**

```
ib_sm> show pm cumulative counters -n 00:05:ad:00:00:01:60:04
```

```
================================================================================================
All PM Cumulative Port Counters for specified node
================================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:01:60:04
port-num : 1
chassis-guid : 00:05:ad:03:00:01:60:04
slot-num : 1
ext-port-num : 1
data-is-valid : true
error-status : not exceeded
utilization-status : not exceeded
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 0
xmit-data : 7137576
rcv-data : 7095816
xmit-pkts : 99133
rcv-pkts : 98553
xmit-rate : 0 %
rcv-rate : 0 %
...
subnet-prefix : fe:80:00:00:00:00:00:00
```
node-guid : 00:05:ad:00:00:01:60:04
port-num : 5
chassis-guid : 00:05:ad:00:00:01:60:04
slot-num : 1
ext-port-num : 5
data-is-valid : true
error-status : not exceeded
utilization-status : exceeded
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 0
xmit-data : 131390609
rcv-data : 9033677402
xmit-pkts : 5911654
rcv-pkts : 17433824
xmit-rate : 0 %
rcv-rate : 0 %

subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:01:60:04
port-num : 6
chassis-guid : 00:05:ad:00:00:01:60:04
slot-num : 1
ext-port-num : 6
data-is-valid : true
error-status : not exceeded
utilization-status : not exceeded
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 0
xmit-data : 238392
rcv-data : 238392
xmit-pkts : 3311
rcv-pkts : 3311
xmit-rate : 0 %
rcv-rate : 0 %

Related Commands config pm monitor state, page 3-44
show pm cumulative error counters

To display the cumulative counters for ports that have exceeded the monitored threshold on any field, use the `show pm cumulative error counters` command.

```
show pm cumulative error counters [-n guid [-p port]]
```

**Syntax Description**

- `-n` (Optional) Displays counters only for a specified node.
- `guid` (Optional) Specifies a node.
- `-p` (Optional) Displays counters only for a specified port.
- `port` (Optional) Specifies a port.

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to view the cumulative number of counters on ports.

**Examples**

```
ib_sm> show pm cumulative error counters

================================================================================
All PM Cumulative Error Port Counters
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:01:60:04
port-num : 5
chassis-guid : 00:05:ad:03:00:01:60:04
slot-num : 1
ext-port-num : 5
data-is-valid : true
error-status : not exceeded
utilization-status : exceeded
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 0
xmit-data : 30714320
rcv-data : 2127951866
xmit-pkts : 1357607
rcv-pkts : 4106365
xmit-rate : 0 %
rcv-rate : 23 %
subnet-prefix : fe:80:00:00:00:00:00:00
```

- `-n` (Optional) Displays counters only for a specified node.
- `guid` (Optional) Specifies a node.
- `-p` (Optional) Displays counters only for a specified port.
- `port` (Optional) Specifies a port.
show pm cumulative error counters

node-guid : 00:05:ad:00:00:01:60:04
port-num : 18
chassis-guid : 00:05:ad:03:00:01:60:04
slot-num : 1
ext-port-num : 18
data-is-valid : true
error-status : not exceeded
utilization-status : exceeded
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 0
xmit-discards : 0
xmit-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0
vl15-dropped : 0
xmit-data : 2132724002
rcv-data : 31795018
xmit-pkts : 4127798
rcv-pkts : 1374226
xmit-rate : 23 %
rcv-rate : 0 %

Related Commands

config pm monitor state, page 3-44
config pm threshold, page 3-47
show pm monitor config

To display the PM monitoring configuration, use the `show pm monitor config` command.

```
show pm monitor config
```

**Syntax Description**
This command has no arguments or keywords.

**Defaults**
This command has no default settings.

**Usage Guidelines**
The configuration values displayed are state, poll-interval, and start-delay.

**Examples**
```
ib_sm> show pm monitor config

PM monitor configuration
state : enabled-cisco-switches
poll-interval : 30 seconds
start-delay : 5 seconds
```

**Related Commands**
- `config pm monitor poll-interval`, page 3-42
- `config pm monitor start-delay`, page 3-43
- `config pm monitor state`, page 3-44
show pm monitored ports

To display a list of ports that the user has explicitly configured to be monitored by the PM, use the show pm monitored ports command.

```
show pm monitored ports [-n guid [-p port]]
```

**Syntax Description**

- `-n` (Optional) Displays ports only for a specified node.
- `guid` (Optional) Specifies a node.
- `-p` (Optional) Displays only a specified port.
- `port` (Optional) Specifies a port.

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to display monitored ports.

**Examples**

```
ib_sm> show pm monitored ports
```

```
+--------------------------------------------------+
| All PM Monitored Ports                           |
+--------------------------------------------------+
| subnet-prefix : fe:80:00:00:00:00:00:00          |
| node-guid : 00:05:ad:00:00:04:e5:64             |
| port-num : 1                                     |
+--------------------------------------------------+
```

**Related Commands**

`config pm monitored port`, page 3-45
show pm port counter access

To identify if access to PM port counters is enabled or disabled, use the `show pm port counter access` command.

```plaintext
show pm port counter access
```

**Syntax Description**
This command has no arguments or keywords.

**Defaults**
This command has no default settings.

**Usage Guidelines**
Access appears as enabled or disabled.

**Examples**
```
ib_sm> show pm port counter access
=================================================================
PM Port Counter Access
=================================================================
port-counter-access : enabled
```

**Related Commands**
config pm port counter access, page 3-46
show pm port counters

To display port counters in the network, use the **show pm port counters** command.

```
show pm port counters [-n guid [-p port]]
```

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-n</td>
<td>(Optional) Displays counters for a specified node only.</td>
</tr>
<tr>
<td>guid</td>
<td>(Optional) Specifies a node with a node guid.</td>
</tr>
<tr>
<td>-p</td>
<td>(Optional) Displays counters for a specified port only.</td>
</tr>
<tr>
<td>port</td>
<td>(Optional) Specifies a port with a port number.</td>
</tr>
</tbody>
</table>

| Defaults | No default behavior or values. |

| Usage Guidelines | This command shows all counters that the user requests (unless the -n and possibly -p options are given). |

<table>
<thead>
<tr>
<th>Examples</th>
<th>ib_sm&gt; show pm port counters -n 00:05:ad:00:00:01:60:04</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All PM Port Counters for specified node</td>
</tr>
<tr>
<td></td>
<td>subnet-prefix : fe:80:00:00:00:00:00:00</td>
</tr>
<tr>
<td></td>
<td>node-guid : 00:05:ad:00:00:01:60:04</td>
</tr>
<tr>
<td></td>
<td>port-num : 1</td>
</tr>
<tr>
<td></td>
<td>chassis-guid : 00:05:ad:03:00:01:60:04</td>
</tr>
<tr>
<td></td>
<td>slot-num : 1</td>
</tr>
<tr>
<td></td>
<td>ext-port-num : 1</td>
</tr>
<tr>
<td></td>
<td>data-is-valid : true</td>
</tr>
<tr>
<td></td>
<td>symbol-errors : 65535</td>
</tr>
<tr>
<td></td>
<td>link-recovery-errors : 9</td>
</tr>
<tr>
<td></td>
<td>link-downs : 13</td>
</tr>
<tr>
<td></td>
<td>rcv-errors : 0</td>
</tr>
<tr>
<td></td>
<td>rcv-remote-phy-errors : 0</td>
</tr>
<tr>
<td></td>
<td>rcv-switch-relay-errors : 0</td>
</tr>
<tr>
<td></td>
<td>xmit-discards : 60</td>
</tr>
<tr>
<td></td>
<td>xmit-constraint-errors : 60</td>
</tr>
<tr>
<td></td>
<td>rcv-constraint-errors : 0</td>
</tr>
<tr>
<td></td>
<td>local-link-integrity-errors : 0</td>
</tr>
<tr>
<td></td>
<td>excessive-buf-overrun-errors : 0</td>
</tr>
<tr>
<td></td>
<td>vl15-dropped : 0</td>
</tr>
<tr>
<td></td>
<td>xmit-data : 36746496</td>
</tr>
<tr>
<td></td>
<td>rcv-data : 36532368</td>
</tr>
<tr>
<td></td>
<td>xmit-pkts : 510368</td>
</tr>
<tr>
<td></td>
<td>rcv-pkts : 507394</td>
</tr>
<tr>
<td></td>
<td>subnet-prefix : fe:80:00:00:00:00:00:00</td>
</tr>
<tr>
<td></td>
<td>node-guid : 00:05:ad:00:00:01:60:04</td>
</tr>
<tr>
<td></td>
<td>port-num : 5</td>
</tr>
<tr>
<td></td>
<td>chassis-guid : 00:05:ad:03:00:01:60:04</td>
</tr>
<tr>
<td></td>
<td>slot-num : 1</td>
</tr>
<tr>
<td></td>
<td>ext-port-num : 5</td>
</tr>
<tr>
<td></td>
<td>data-is-valid : true</td>
</tr>
<tr>
<td></td>
<td>symbol-errors : 0</td>
</tr>
</tbody>
</table>

Cisco High-Performance Subnet Manager for InfiniBand Server Switches
```plaintext
show pm port counters

link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 2
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0

vl15-dropped : 0
xmit-data : 4294967295
rcv-data : 4294967295
xmit-pkts : 477767680
rcv-pkts : 470032589

subnet-prefix : fe:80:00:00:00:00:00:00
node-guid : 00:05:ad:00:00:01:60:04
port-num : 6
chassis-guid : 00:05:ad:03:00:01:60:04
slot-num : 1
ext-port-num : 6
data-is-valid : true
symbol-errors : 0
link-recovery-errors : 0
link-downs : 0
rcv-errors : 0
rcv-remote-phy-errors : 0
rcv-switch-relay-errors : 9
xmit-discards : 0
xmit-constraint-errors : 0
rcv-constraint-errors : 0
local-link-integrity-errors : 0
excessive-buf-overrun-errors : 0

vl15-dropped : 0
xmit-data : 4294967295
rcv-data : 4294967295
xmit-pkts : 206618086
rcv-pkts : 206562365

...
Related Commands  config pm port counter access, page 3-46
show pm threshold

To display details of ports in the subnet, use the show pm threshold command.

show pm threshold

Syntax Description

This command has no arguments or keywords.

Defaults

This command has no default settings.

Usage Guidelines

If the command displays “none,” no threshold has been set.

Examples

ib_sm> show pm threshold

PM thresholds
symbol-errors : none
link-recovery-errors : none
link-downs : none
rcv-errors : none
rcv-remote-phy-errors : none
rcv-switch-relay-errors : none
xmit-discards : none
xmit-constraint-errors : none
rcv-constraint-errors : none
local-link-integrity-errors : none
excessive-buf-overrun-errors : none
vl15-dropped : none
xmit-rate : 1 %
rcv-rate : 1 %

Related Commands

config pm threshold, page 3-47
show port

To display InfiniBand port information for one port or all ports on one node or all ports of all nodes in
the IB subnet, use the **show port** command.

```
show port [-s] [-n guid [-p port]]
```

**Syntax Description**

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-s</code></td>
<td>(Optional) Prints a summary line for each port.</td>
</tr>
<tr>
<td><code>-n</code></td>
<td>(Optional) Prints only information for the node specified by <code>guid</code>.</td>
</tr>
<tr>
<td><code>guid</code></td>
<td>(Optional) Specifies the one node for which the command displays information.</td>
</tr>
<tr>
<td><code>-p</code></td>
<td>(Optional) Prints only information for the port specified by <code>port</code>.</td>
</tr>
<tr>
<td><code>port</code></td>
<td>(Optional) Specifies the one port for which the command displays information.</td>
</tr>
</tbody>
</table>

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to view the attributes of the ports on the network.

**Examples**

```
ib_sm> show port -s
```

```
Subnet Manager Port Summary
node-guid port lid state link
00:05:ad:00:00:00:18:5d 0 20 active 4x-sdr
00:05:ad:00:00:00:18:5d 1 0 active 4x-sdr
00:05:ad:00:00:00:18:5d 2 0 down 4x-sdr
00:05:ad:00:00:00:18:5d 3 0 down 4x-sdr
00:05:ad:00:00:00:18:5d 4 0 down 4x-sdr
00:05:ad:00:00:00:18:5d 5 0 down 4x-sdr
00:05:ad:00:00:00:18:5d 6 0 down 4x-sdr
```

**Related Commands**

- `show neighbor`, page 5-10
- `show node`, page 5-12
show route

To display the switches that data traverses on the path from one LID to another, use the `show route` command.

```
show route [-s] [-c] src-lid dst-lid | list
```

**Syntax Description**

- `-s` (Optional) Displays summarized output in tabular format
- `-c` (Optional) Displays the switch chassis instead of the individual switch chips.
- `src-lid` Specifies the source LID of the path.
- `dst-lid` Specifies the destination LID of the path.
- `list` Displays a summary list of all routes.

**Note**

A chassis GUID is the unique GUID that identifies a chassis. It is based on the system image GUID of any switch node inside the chassis, with the fifth byte zeroed.

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to track the switches that data traverses on a path.

**Examples**

```
ib_sm> show port -s
00:05:ad:00:00:03:2e:60  1     21    active     4x-sdr
00:05:ad:00:00:03:2e:60  2     22    active     4x-sdr
00:05:ad:00:00:04:82:bc  1     825   active     4x-sdr

ib_sm> show route -c -s 825 22

================================================================================
SM Route Chassis Summary View
================================================================================
chassis-guid              input-port output-port
--------------------------------------------------------------------------------
00:06:6a:08:00:00:01:0b   10/5       2/6
00:05:ad:03:00:00:18:5d   1/1        1/12

ib_sm> show route -s 825 22

================================================================================
SM Switch Route Summary View
================================================================================
node-guid              input-port output-port input-rate output-rate
--------------------------------------------------------------------------------
00:06:6a:00:01:00:01:e6  5           16          10 gbps    10 gbps
```
Cisco High-Performance Subnet Manager for InfiniBand Server Switches

Chapter 5      Show Commands

show route

ib_sm> show route 825 22

SM Switch Route

src-lid : 825
dst-lid : 22

node-guid : 00:06:6a:00:01:00:01:e6
input-port : 5
output-port : 16
input-rate : 10 gbps
output-rate : 10 gbps

node-guid : 00:06:6a:00:04:00:01:52
input-port : 22
output-port : 19
input-rate : 10 gbps
output-rate : 10 gbps

node-guid : 00:06:6a:00:01:00:02:30
input-port : 13
output-port : 6
input-rate : 10 gbps
output-rate : 10 gbps

node-guid : 00:05:ad:00:00:00:18:5d
input-port : 1
output-port : 12
input-rate : 10 gbps
output-rate : 10 gbps

Related Commands

show neighbor, page 5-10
show route-around

To show the route-around entries that have been configured by the user, use the **show route-around** command.

**show route-around [-s] [-c chassis-guid] [-n node-guid [-p port]]**

### Syntax Description

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>-s</code></td>
<td>(Optional) Displays a summary of route-around entries.</td>
</tr>
<tr>
<td><code>-c</code></td>
<td>(Optional) Displays only the entry with the matching chassis GUID.</td>
</tr>
<tr>
<td><code>chassis-guid</code></td>
<td>(Optional) Displays the ID of the specified chassis.</td>
</tr>
<tr>
<td><code>-n</code></td>
<td>(Optional) Displays the specified node.</td>
</tr>
<tr>
<td><code>node-guid</code></td>
<td>(Optional) Displays only the entry with the matching node GUID.</td>
</tr>
<tr>
<td><code>-p</code></td>
<td>(Optional) Displays the specified port.</td>
</tr>
<tr>
<td><code>port</code></td>
<td>(Optional) Displays only the entry with the matching port GUID.</td>
</tr>
</tbody>
</table>

### Note

A chassis GUID is the unique GUID that identifies a chassis. It is based on the system image GUID of any switch node inside the chassis, with the fifth byte zeroed.

### Defaults

This command has no default values.

### Usage Guidelines

Use this command to show the route-around entries that have been configured.

### Examples

```
ib_sm> show route-around

================================================================================
All Route-Around entries
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
type : chassis
chassis-guid : 00:05:ad:00:01:00:d0:50

subnet-prefix : fe:80:00:00:00:00:00:00
type : node
node-guid : 00:05:ad:00:00:01:0c:1d

subnet-prefix : fe:80:00:00:00:00:00:00
type : port
node-guid : 00:05:ad:00:00:01:0c:19
port-num : 5
```

### Related Commands

- config route-around chassis, page 3-52
- config route-around node, page 3-53
- config route-around port, page 3-54
show service

To show the IB services available to the subnet, use the `show service` command.

```
show service [-s] [-i svc-id | -g svc-gid | -p p_key]
```

**Syntax Description**

- `-s` (Optional) Displays a summary line for each service.
- `-i` (Optional) Displays only services with a specified service ID.
- `svc-id` (Optional) Specifies a service ID.
- `-g` (Optional) Displays only services with a specified port GID.
- `svc-gid` (Optional) Specifies a port GID.
- `-p` (Optional) Displays only services with a specified partition key.
- `p_key` (Optional) Specifies a partition key.

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to view the services that run on your subnet.

**Examples**

```
ib_sm> show service
```

```
================================================================================
All Services
================================================================================
subnet-prefix : fe:80:00:00:00:00:00:00
service-id : 10:00:0c:e1:00:41:54:53
service-gid : fe:80:00:00:00:00:00:00:00:05:ad:00:00:00:16:61
service-p-key : ff:ff
service-lease : indefinite
service-key : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
service-name : DAPL Address Translation Service
service-data :
data-8 : 00:00:00:00:00:00:00:00:00:00:00:00:00:c0:a8:00:53
data-16 : 0000:0000:0000:0000:0000:0000:0000:0000:
data-32 : 00000000:00000000:00000000:00000000
data-64 : 0000000000000000:0000000000000000
```

**Related Commands**

`show node`, page 5-12
show sl-vl-mapping

To display the SL-to-VL mapping tables of ports in the subnet, use the show sl-vl mapping command.

```
show sl-vl-mapping [-n <node-guid> [-p <port-num>]] [-s]
```

**Syntax Description**

- `-n` (Optional) Displays the mapping tables for the ports of a given node.
- `<node-guid>` (Optional) Specifies the GUID of a node.
- `-p` (Optional) Displays the mapping table for the given port.
- `<port-num>` (Optional) Specifies a port number.
- `-s` (Optional) Displays the programming status of the SL-to-VL mapping tables.

**Command Default**

This command has no default settings.

**Usage Guidelines**

This command displays the SL-to-VL mapping tables of ports in the subnet.

**Examples**

```
ib_sm> show sl-vl-mapping -n 00:05:ad:00:00:01:29:aa
```

```
==================================================================
SL To VL Mapping Tables
==================================================================
node-guid input-port/output-port  sl  vl
--------------------  ------------
00:05:ad:00:00:01:29:aa  1/1  0  0
00:05:ad:00:00:01:29:aa  1/1  1  1
00:05:ad:00:00:01:29:aa  1/1  2  2
00:05:ad:00:00:01:29:aa  1/1  3  3
00:05:ad:00:00:01:29:aa  1/1  4  4
00:05:ad:00:00:01:29:aa  1/1  5  5
00:05:ad:00:00:01:29:aa  1/1  6  6
00:05:ad:00:00:01:29:aa  1/1  7  7
00:05:ad:00:00:01:29:aa  1/1  8  0
00:05:ad:00:00:01:29:aa  1/1  9  1
00:05:ad:00:00:01:29:aa  1/1 10  2
00:05:ad:00:00:01:29:aa  1/1 11  3
00:05:ad:00:00:01:29:aa  1/1 12  4
00:05:ad:00:00:01:29:aa  1/1 13  5
00:05:ad:00:00:01:29:aa  1/1 14  6
00:05:ad:00:00:01:29:aa  1/1 15  7
```

**Related Commands**

- `config sl-vl-mapping oper-vl add`, page 3-57
- `config sl-vl-mapping oper-vl apply`, page 3-59
- `config sl-vl-mapping oper-vl delete`, page 3-60
- `show sl-vl-mapping-config`, page 5-37
show sl-vl-mapping-config

To display the user-provisioned SL-to-VL mapping profiles, use the show sl-vl-mapping-config command.

    show sl-vl-mapping-config [-s]

**Syntax Description**

<table>
<thead>
<tr>
<th>Syntax</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-s</td>
<td>(Optional) Displays the summary view of the SL-to-VL mapping profiles that are configured.</td>
</tr>
</tbody>
</table>

**Command Default**

This command has no default settings.

**Usage Guidelines**

This command displays the user-provisioned SL-to-VL mapping profiles.

**Examples**

```
ib_sm> show sl-vl-mapping-config -s
```

```
==============================================================================
SL To VL Mapping Profiles Summary View
==============================================================================
oper-VL : vl0-vl7
status : configuration in progress
```

**Related Commands**

- config sl-vl-mapping oper-vl add, page 3-57
- config sl-vl-mapping oper-vl apply, page 3-59
- config sl-vl-mapping oper-vl delete, page 3-60
- show sl-vl-mapping, page 5-36
show span

To show the port SPANs that are configured by the user, use the `show span` command.

```
show span [-s]
```

**Syntax Description**

- `-s` (Optional) Displays a summary view of each configured SPAN.

**Command Default**

This command has no default settings.

**Usage Guidelines**

This command shows the port SPANs that are configured by the user, and it shows the port SPAN status. When a SPAN is in the inactive state, the reason is listed in the state-detail field. The reasons in state-detail include the following:

- Pending-configuration—Subnet Manager is processing the request.
- Path-not-found—SPAN is in inactive state due to either the src-port or the dst-port of the SPAN is not in active state or has a user configured route-around on it.
- SM-node-neighbor—Node connected to either the src-port or the dst-port has a Subnet Manager running on it.
- Non-HCA-neighbor—Node connected to either the src-port or the dst-port is not an HCA.
- Non-switch-node—Node GUID specified for the SPAN is not an IB switch node.
- Mirror-incapable-node—Node GUID specified for the SPAN is not capable of mirroring packets.

**Examples**

```
ib_sm> show span
===============================================================================
All Spanning entries
===============================================================================
  src-node-guid : 00:05:ad:00:00:00:18:5d
  src-port : 17
  dst-node-guid : 00:05:ad:00:00:00:18:5d
  dst-port : 19
  state : active
  state-detail : none

ib_sm> show span -s
===============================================================================
All Spanning entries
===============================================================================
  src-node-guid    src-port  dst-node-guid    dst-port  state
===============================================================================
  00:05:ad:00:00:00:18:5d  17        00:05:ad:00:00:00:18:5d  19        active
```

**Related Commands**

`config span`, page 3-62
show subscription

To display the ports in the subnet that have subscribed with the Subnet Manager for event notifications, use the show subscription command.

```
show subscription [-s] [-l lid | -n guid]
```

This command shows which ports in the subnet have subscribed for event notifications with the Subnet Manager.

**Syntax Description**

- **-s** (Optional) Displays a summary.
- **-l** (Optional) Displays subscriptions only for the port with the specified LID.
- **lid** (Optional) Specifies a LID.
- **-n** (Optional) Displays subscriptions only for ports on the specified node.
- **guid** (Optional) Specifies a node.

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command shows which endports in the network have subscribed for events. In the example below, SRP has requested out-of-service events to know when endports have gone from the subnet. Note that the lid-range-begin value of 65535 (0xFFFF) indicates that the subscription covers all LIDs in the network.

**Examples**

```
ib_sm> show subscription
```

```
--------------------------------------------------------------------------------
 All Subscriptions
--------------------------------------------------------------------------------
 subnet-prefix : fe:80:00:00:00:00:00:00
    lid : 897
 node-guid : 00:05:ad:00:00:04:e4:4c
    port-num : 1
    source-qpn : 00:00:01
    gid : 00:00:00:00:00:00:00:00:00:00:00:00:00:00:00:00
    lid-range-begin : 65535
    lid-range-end : 0
    is-generic : true
    trap-num : 65
 producer-type : class-mgr
 type : subnet-management
 resp-time-value : 0
```

**Related Commands**

- show node, page 5-12
show switch

To display the IB SwitchInfo for a switch (or all switches) in the IB subnet, use the `show switch` command.

```
show switch [-s] [-n guid]
```

**Syntax Description**

- `-s` (Optional) Displays a summary line for each switch.
- `-n` (Optional) Displays only information for the node represented by `guid`.
- `guid` (Optional) Specifies a single node to display.

**Defaults**

This command has no default settings.

**Usage Guidelines**

Use this command to view the switches in your network.

**Examples**

```
ib_sm> show switch
```

```
=================================================================================================
Subnet Management Switches
=================================================================================================
    subnet-prefix : fe:80:00:00:00:00:00:00
    node-guid : 00:05:ad:00:00:01:60:04
    linear-fdb-cap : 49152
    random-fdb-cap : 0
    mcast-fdb-cap : 1024
    linear-fdb-top : 10240
    default-port : 0
    def-pri-mcast-port : 255
    def-non-pri-mcast-port : 255
    life-time-value : 18
    port-state-change : 1
    lids-per-port : 0
    partition-enf-cap : 32
    in-enf-cap : 1
    out-enf-cap : 1
    in-filter-raw-pkt-cap : 1
    out-filter-raw-pkt-cap : 1
    enhanced-port-0 : yes
```

**Related Commands**

- `show neighbor`, page 5-10
- `show node`, page 5-12
show version

To show the version number of the HSM, use the show version command.

```
show version
```

**Syntax Description**

This command has no arguments or keywords.

**Defaults**

This command has no default settings.

**Usage Guidelines**

This command shows the version of the High-Performance Subnet Manager application only. For versions of host firmware, host-side drivers, and switch OS, consult your SFS documentation.

**Examples**

```
ib_sm> show version
Cisco High-Performance IB Subnet Manager 1.2.0.
```

**Related Commands**

None.
show vl-arbitration

To display the VL arbitration tables of ports in the subnet, use the `show vl-arbitration` command.

```
show vl-arbitration [-n node-guid [-p port-num] ] [-s]
```

**Syntax Description**

- `-n` (Optional) Displays the VL arbitration tables for the ports of a given node.
- `node-guid` (Optional) Specifies the GUID of a node.
- `-p` (Optional) Displays the arbitration table for the given port.
- `port-num` (Optional) Specifies the port number.
- `-s` (Optional) Displays the summary view of arbitration VL tables.

**Command Default**

This command has no default settings.

**Usage Guidelines**

This command enables you to view the VL-arbitration tables that are programmed on ports in the subnet.

**Examples**

```
ib_sm> show vl-arbitration -n 00:05:ad:00:00:00:15:02

==============================================================================
VL Arbitration Tables
==============================================================================
node-guid : 00:05:ad:00:00:00:15:02
port-num : 1
port-state : active
VL-cap : vl0-vl7
oper-VL : vl0-vl7
vl-high-limit : 0
vlarb-config-needed : no
low-priority-lower :
  vl0 : 1
  vl1 : 1
  vl2 : 1
  vl3 : 1
  vl4 : 1
  vl5 : 1
  vl6 : 1
  vl7 : 1
high-priority-lower :
  vl0 : 0
  vl1 : 0
  vl2 : 0
  vl3 : 0
  vl4 : 0
  vl5 : 0
  vl6 : 0
  vl7 : 0
```

**Related Commands**

- `config vl-arbitration add`, page 3-68
- `config vl-arbitration apply`, page 3-70
config vl-arbitration delete, page 3-71
show vl-arbitration-config, page 5-44
show vl-arbitration-config

To view the user-provisioned VL-arbitration profiles, use the show vl-arbitration-config command.

    show vl-arbitration-config [-scope subnet | node | port] [-s]

<table>
<thead>
<tr>
<th>Syntax Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>-scope</td>
<td>(Optional) Displays the profiles with the indicated scope.</td>
</tr>
<tr>
<td>subnet</td>
<td>(Optional) Specifies the subnet in the scoped profile.</td>
</tr>
<tr>
<td>node</td>
<td>(Optional) Specifies a node in the scoped profile.</td>
</tr>
<tr>
<td>port</td>
<td>(Optional) Specifies a port in the scoped profile.</td>
</tr>
<tr>
<td>-s</td>
<td>(Optional) Displays a summary view of the configured arbitration profiles.</td>
</tr>
</tbody>
</table>

Command Default

This command has no default settings.

Usage Guidelines

This command displays the user-provisioned VL arbitration profiles.

Examples

    ib_sm> show vl-arbitration-config -s

    =================================================================================
    VL Arbitration Profiles Summary View
    =================================================================================
    scope : subnet
    status : configuration in progress

    scope : node
    node-guid : 00:05:ad:00:00:01:29:aa
    status : configuration in progress

    scope : node
    node-guid : 00:05:ad:00:00:01:29:ad
    status : configuration done

    scope : port
    node-guid : 00:05:ad:00:00:02:5b:59
    port-num : 3
    status : configuration in progress

Related Commands

config vl-arbitration add, page 3-68
config vl-arbitration apply, page 3-70
config vl-arbitration delete, page 3-71
show vl-arbitration, page 5-42
# Index

## A

<table>
<thead>
<tr>
<th>Command</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>audience</td>
<td>vii</td>
</tr>
</tbody>
</table>

## C

<table>
<thead>
<tr>
<th>Command</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>CLI</td>
<td>3, 9</td>
</tr>
<tr>
<td>Command Line Interface</td>
<td>3</td>
</tr>
<tr>
<td>commands</td>
<td></td>
</tr>
<tr>
<td>config ca-link-hoqlife</td>
<td>3</td>
</tr>
<tr>
<td>config db-sync cold-sync-limit</td>
<td>4</td>
</tr>
<tr>
<td>config db-sync cold-sync-period</td>
<td>5</td>
</tr>
<tr>
<td>config db-sync cold-sync-timeout</td>
<td>6</td>
</tr>
<tr>
<td>config db-sync disable</td>
<td>7</td>
</tr>
<tr>
<td>config db-sync enable</td>
<td>8</td>
</tr>
<tr>
<td>config db-sync max-backup-sms</td>
<td>9</td>
</tr>
<tr>
<td>config db-sync new-session-delay</td>
<td>10</td>
</tr>
<tr>
<td>config db-sync poll-interval</td>
<td>11</td>
</tr>
<tr>
<td>config db-sync resync-interval</td>
<td>12</td>
</tr>
<tr>
<td>config db-sync session-timeout</td>
<td>13</td>
</tr>
<tr>
<td>config lmc</td>
<td>14</td>
</tr>
<tr>
<td>config local-node-retries</td>
<td>16</td>
</tr>
<tr>
<td>config mad-retries</td>
<td>17</td>
</tr>
<tr>
<td>config master-poll-interval</td>
<td>18</td>
</tr>
<tr>
<td>config master-poll-retries</td>
<td>19</td>
</tr>
<tr>
<td>config max-active-sms</td>
<td>20</td>
</tr>
<tr>
<td>config max-hops</td>
<td>21</td>
</tr>
<tr>
<td>config multicast-group-ib-create</td>
<td>25</td>
</tr>
<tr>
<td>config multicast-group-ib delete</td>
<td>27</td>
</tr>
<tr>
<td>config multicast-group-ipoib create</td>
<td>28</td>
</tr>
<tr>
<td>config multicast-group-ipoib delete</td>
<td>30</td>
</tr>
<tr>
<td>config node-timeout</td>
<td>31</td>
</tr>
<tr>
<td>config partition key</td>
<td>32</td>
</tr>
<tr>
<td>config partition key ipoib</td>
<td>34</td>
</tr>
<tr>
<td>config partition member add</td>
<td>36</td>
</tr>
<tr>
<td>config partition member remove</td>
<td>37</td>
</tr>
<tr>
<td>config partition member type</td>
<td>38</td>
</tr>
<tr>
<td>config pm connection monitor</td>
<td>40</td>
</tr>
<tr>
<td>config pm monitored port</td>
<td>45</td>
</tr>
<tr>
<td>config pm monitor poll-interval</td>
<td>42</td>
</tr>
<tr>
<td>config pm monitor start-delay</td>
<td>43</td>
</tr>
<tr>
<td>config pm monitor state</td>
<td>44</td>
</tr>
<tr>
<td>config pm port counter access</td>
<td>46</td>
</tr>
<tr>
<td>config pm threshold</td>
<td>47</td>
</tr>
<tr>
<td>config priority</td>
<td>49</td>
</tr>
<tr>
<td>config response-timeout</td>
<td>51</td>
</tr>
<tr>
<td>config route-around chassis</td>
<td>52</td>
</tr>
<tr>
<td>config route-around node</td>
<td>53</td>
</tr>
<tr>
<td>config route-around port</td>
<td>54</td>
</tr>
<tr>
<td>config sa-mad-queue-depth</td>
<td>55</td>
</tr>
<tr>
<td>config sl-vl-mapping oper-vl add</td>
<td>57</td>
</tr>
<tr>
<td>config sl-vl-mapping oper-vl apply</td>
<td>59</td>
</tr>
<tr>
<td>config sl-vl-mapping oper-vl delete</td>
<td>60</td>
</tr>
<tr>
<td>config sm-key</td>
<td>61</td>
</tr>
<tr>
<td>config span</td>
<td>62</td>
</tr>
<tr>
<td>config sweep-interval</td>
<td>63</td>
</tr>
<tr>
<td>config switch-life-time</td>
<td>64</td>
</tr>
<tr>
<td>config sw-link-hoqlife</td>
<td>65</td>
</tr>
<tr>
<td>config trace</td>
<td>67</td>
</tr>
<tr>
<td>config vl-arbitration add</td>
<td>68</td>
</tr>
<tr>
<td>config vl-arbitration apply</td>
<td>70</td>
</tr>
<tr>
<td>config vl-arbitration delete</td>
<td>71</td>
</tr>
<tr>
<td>config wait-report-response</td>
<td>72</td>
</tr>
<tr>
<td>echo</td>
<td>2</td>
</tr>
<tr>
<td>exit</td>
<td>3</td>
</tr>
<tr>
<td>help</td>
<td>4</td>
</tr>
</tbody>
</table>
history 5
pm reset connection counters 2
pm reset counters 3
pm test connection 5
repeat 6
run 7
show config 3
show db-sync 4
show lft 6
show mft 7
show multicast 8
show neighbor 10
show node 12
show other-sm 13
show partition 14
show pm connection counters 16
show pm connection monitors 19
show pm cumulative counters 20
show pm cumulative error counters 22
show pm monitor config 24
show pm monitored ports 25
show pm port counter access 26
show pm port counters 27
show pm threshold 30
show port 31
show route 32
show route-around 34
show service 35
show sl-vl mapping 36
show sl-vl-mapping-config 37
show span 38
show subscription 39
show switch 40
show version 41
show vl-arbitration 42
show vl-arbitration-config 44
shutdown 11
compatibility 4
config lmc command 14
config mad-retries command 17
config master-poll-interval command 18
config master-poll-retries command 19
config max-active-sms command 20
config max-hops command 21
config multicast-group-ib create command 25
config multicast-group-ib delete command 27
config multicast-group-ipoib create command 28
config multicast-group-ipoib delete command 30
config node-timeout command 31
config partition key command 32
config partition member add command 36
config partition member remove command 37
config partition member type commands 38
config pm connection monitor command 40
config pm monitored port command 45
config pm monitor poll-interval command 42
config pm monitor start-delay command 43
config pm monitor state command 44
config pm port counter access command 46
config pm threshold command 47
config priority command 49
config response-timeout command 51
config sa-mad-queue-depth command 55
config sm-key command 61
config sweep-interval command 63
config switch-life-time command 64
config sw-link-hqlife command 65
config trace command 67
configuration
    restoring 11
    saving 11
config wait-report-response command 72
connection monitor 40
conventions viii
counter access 46
counters, resetting 3
counters, resetting connection 2
Index

D
documentation
  additional publications ix
  conventions viii
  obtaining ix
  organization vii

E
ext command 3

F
fabric 1
failover 2
features 2
fundamentals 1

H
history command 5
hops, maximum 21

I
installation procedure 4
installing 4
interoperability 3

M
MAD retries 17
master poll interval 18
master poll retries 19
monitored port 45
monitor poll-interval 42
monitor start-delay 43

monitor state 44
multicast
  ib 25, 27
  ipoib 28, 30

N
network 1
node timeout 31

O
organization vii
overview 1

P
p_key 32
partition key 32
partitions
  adding members 36
  changing type 38
  removing members 37
performance monitoring 2
pm connection monitor 40
pm monitored port 45
pm monitor poll-interval 42
pm monitor start-delay 43
pm monitor state 44
pm port counter access 46
pm reset connection counters command 2
pm reset counters command 3
pm test connection command 5
pm threshold 47
poll interval 18
poll retries 19
preface vii
priority, Subnet Manager 49
### Index

#### R

- requirements 4
- reset counters 3
- response timeout 51
- restoring the configuration 11
- run command 7

#### S

- saving the configuration 11
- scalability 3
- show config command 3
- show db-sync command 4
- show lft command 6
- show mft command 7
- show multicast command 8
- show neighbor command 10
- show node command 12
- show other-sm command 13
- show partition command 14
- show pm connection counters command 16
- show pm connection monitors command 19
- show pm cumulative counters command 20
- show pm cumulative error counters command 22
- show pm monitor config command 24
- show pm monitored ports command 25
- show pm port counter access command 26
- show pm port counters command 27
- show pm threshold command 30
- show port command 31
- show route command 32
- show service command 35
- show subscription command 39
- show switch command 40
- show version command 41
- shutdown command 11
- sm key 61
- subnet 1

---

**Subnet Manager**

- compatibility 4
- installing 4
- interoperability 3
- key 61
- maximum number of 20
- priority 49
- requirements 4
- saving and restoring the configuration 11
- scalability 3
- speed 3
- using 5

- why a high-performance SM? 2

**support**

- obtaining ix

**sweep interval** 63

---

**T**

- threshold 47
- timeout
  - node 31
  - response 51
- trace 67

---

**U**

- using 5