

**Sun Network QDR InfiniBand Gateway
Switch Documentation Supplement for
Firmware Version 2.2**

ORACLE

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Using This Documentation

- **Overview** – Provides information to supplement the firmware version 2.1 Installation Guide, Administration Guide, Command Reference, Oracle ILOM document, and Service Manual for the Sun Network QDR InfiniBand Gateway Switch
- **Audience** – Technicians, system administrators, and authorized service providers
- **Required knowledge** – Advanced experience installing, administering, and servicing network hardware

Product Documentation Library

Documentation and resources for this product and related products are available at http://docs.oracle.com/cd/E76425_01/.

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Provide feedback about this documentation at <http://www.oracle.com/goto/docfeedback>.

Supplementing the Installation Guide

These topics provide information supplementing or superseding that found in the *Sun Network QDR InfiniBand Gateway Switch Installation Guide for Firmware Version 2.1*.

- [“Electrical Specifications” on page 11](#)
- [“IB Node Description” on page 12](#)

Related Information

- [“Supplementing the Administration Guide” on page 13](#)
- [“Supplementing the Oracle ILOM Document” on page 63](#)
- [“Supplementing the Service Manual” on page 77](#)
- [“Supplementing the Command Reference” on page 79](#)

Electrical Specifications

This table lists the electrical requirements of the gateway.

| Parameter | AC Version Requirement |
|---------------------|---|
| Voltage | 100 VAC to 240 VAC single phase, 47 to 63 Hz |
| Current (per input) | 5.4 A maximum per input at 100 VAC |
| Current (total) | 5.6 A maximum for all inputs at 100 VAC |
| Power | 320 Watts (Total input power is approximately equally divided among the operating power supplies) |

Related Information

- [Power Cord Requirements](#)

- Attach the Power Cords

IB Node Description

In the output of some hardware and InfiniBand commands, the gateway is identified by its node description. The node description is of this format:

```
SUN IB QDR GW switch hostname mc_IP
```

```
SUN IB QDR GW switch hostname mc_IP Bridge bridge_number
```

where:

- *hostname* is the host name of the gateway and a maximum of 17 characters. Any additional characters are truncated.
- *mc_IP* is the IP address of the management controller in the gateway.
- *bridge_number* is the number of the BridgeX chip (0 or 1).

For example:

```
SUN IB QDR GW switch IBGateway-03 123.45.67.89
```

```
SUN IB QDR GW switch IBGateway-03 123.45.67.89 Bridge 0
```

Related Information

- Discover the InfiniBand Fabric Topology
- Perform Diagnostics on the InfiniBand Fabric

Supplementing the Administration Guide

These topics provide information supplementing or superseding that found in the *Sun Network QDR InfiniBand Gateway Switch Administration Guide for Firmware Version 2.1*.

- [“Understanding Routing Through the Gateway” on page 13](#)
- [“VNIC Allocation on the Gateway” on page 15](#)
- [“Understanding the Toolbox CLI” on page 16](#)

Related Information

- [“Supplementing the Installation Guide” on page 11](#)
- [“Supplementing the Oracle ILOM Document” on page 63](#)
- [“Supplementing the Service Manual” on page 77](#)
- [“Supplementing the Command Reference” on page 79](#)

Understanding Routing Through the Gateway

The tables in these topics describe the routing through the gateway. The first table maps the switch chip port to a QSFP connector. The second table provides a reverse map. When command output provides a switch chip port, you can use these tables to determine the route that link is following.

- [“Switch Chip Port to QSFP Connectors and Link LED Routes” on page 14](#)
- [“QSFP Connectors and Link LEDs to Switch Chip Port Routes” on page 14](#)
- [Signal Route Through the Gateway](#)

Related Information

- [Gateway Hardware Problems](#)

- InfiniBand Fabric Problems
- Network Management Troubleshooting Guidelines
- Switch GUIDs Overview

Switch Chip Port to QSFP Connectors and Link LED Routes

| Port | Connector | Port | Connector | Port | Connector | Port | Connector |
|------|----------------------------|------|-----------|------|-----------|------|-----------|
| 1 | 1A-ETH-1(P1), 1A-ETH-2(P2) | 10 | 13B | 19 | 0B | 28 | 4A |
| 2 | 1A-ETH-3(P3), 1A-ETH-4(P4) | 11 | 12B | 20 | 0A | 29 | 5B |
| 3 | 0A-ETH-1(P1), 0A-ETH-2(P2) | 12 | 11A | 21 | 1B | 30 | 5A |
| 4 | 0A-ETH-3(P3), 0A-ETH-4(P4) | 13 | 9B | 22 | 1A | 31 | 8A |
| 5 | 15A | 14 | 9A | 23 | 2B | 32 | 8B |
| 6 | 15B | 15 | 10B | 24 | 2A | 33 | 7A |
| 7 | 14A | 16 | 10A | 25 | 3B | 34 | 7B |
| 8 | 14B | 17 | 11B | 26 | 3A | 35 | 6A |
| 9 | 13A | 18 | 12A | 27 | 4B | 36 | 6B |

Related Information

- Display the Switch Chip Port to QSFP Connector Mapping
- Display Link Status
- Display Switch Chip Port Status
- QSFP Connectors and Link LEDs to Switch Chip Port Routes
- Signal Route Through the Gateway

QSFP Connectors and Link LEDs to Switch Chip Port Routes

| Connector Group | Connector A Port | Connector B Port | Connector Group | Connector A Port | Connector B Port |
|-----------------|------------------|------------------|-----------------|------------------|------------------|
| 0 | 20 | 19 | 9 | 14 | 13 |
| 1 | 22 | 21 | 10 | 16 | 15 |
| 2 | 24 | 23 | 11 | 12 | 17 |

| Connector Group | Connector A Port | Connector B Port | Connector Group | Connector A Port | Connector B Port |
|-----------------|------------------|------------------|-----------------|---------------------------------------|------------------|
| 3 | 26 | 25 | 12 | 18 | 11 |
| 4 | 28 | 27 | 13 | 9 | 10 |
| 5 | 30 | 29 | 14 | 7 | 8 |
| 6 | 35 | 36 | 15 | 5 | 6 |
| 7 | 33 | 34 | 0 | 3 (ETH-1, ETH-2), 4 (ETH-3, ETH-4) | |
| 8 | 31 | 32 | 1 | 1 (ETH-1, ETH-2), 2 (ETH-3, ETH-4) | |

Related Information

- Display the Switch Chip Port to QSFP Connector Mapping
- Display Link Status
- Display Switch Chip Port Status
- Switch Chip Port to QSFP Connectors and Link LED Routes
- Signal Route Through the Gateway

VNIC Allocation on the Gateway

By default, VNICs are created and allocated by the management controller of the gateway using Gateway Manual Mode. The `createvnic` command creates the VNICs, and the resulting VNIC resources are controlled by the gateway.

Alternatively, individual hosts can create and allocate VNICs on the gateway. There are two ways to enable this functionality.

- `sethostvniclimit` – Running the `sethostvniclimit` command on the management controller of the gateway restricts the number of VNICs that can be created by specified host ports, for specified external ports 0A-ETH-1 to 0A-ETH-4 and 1A-ETH-1 to 1A-ETH-4. Using the `sethostvniclimit` command to allow host created VNICs is optimal, because the VNIC resources are controlled by the gateway.
- `allowhostconfig` – Running the `allowhostconfig` command on the management controller of the gateway allows all hosts connected to the gateway through the IB fabric to create up to 1000 VNICs on any external port (0A-ETH-1 to 0A-ETH-4 and 1A-ETH-1 to 1A-ETH-4). In this situation, VNIC resources are not controlled by the gateway. Use of the `allowhostconfig` command requires consideration of the impact on the gateway's performance.

Note - Regardless of the method you use to create VNICs, you are limited to a maximum of 1000 VNICs per each external port (0A-ETH-1, 0A-ETH-2, and so on).

Only one of these methods can be used at a time. You can display which method is available for use with the `showgwconfig` command. If in the output of the `showgwconfig` command the Running Value for the `Allow host VNIC config` parameter is `yes`, then unrestricted host created VNICs functionality is enabled (`allowhostconfig`). If you want to restrict host created VNICs, use the `disallowhostconfig` command to change the Running Value to `no` (as seen with the `showgwconfig` command), and then use the `sethostvniclimit` command.

Related Information

- *Gateway Reference*, `sethostvniclimit` command
- *Gateway Reference*, `allowhostconfig` command
- *Gateway Reference*, `showgwconfig` command
- *Gateway Reference*, `disallowhostconfig` command
- Create VNICs
- Enable VNICs
- Disable VNICs
- Delete VNICs

Understanding the Toolbox CLI

These topics describe using the Toolbox CLI utility.

- [“Performing Basic Toolbox CLI Tasks” on page 17](#)
- [“Administering the Fabric Configuration \(Toolbox CLI\)” on page 25](#)
- [“Administering Partitions \(Toolbox CLI\)” on page 32](#)
- [“Administering Subnet Managers \(Toolbox CLI\)” on page 42](#)
- [“Administering Switches \(Toolbox CLI\)” on page 45](#)
- [“Administering Hosts \(Toolbox CLI\)” on page 51](#)
- [“Administering Logs \(Toolbox CLI\)” on page 58](#)

Related Information

- [“Understanding Routing Through the Gateway” on page 13](#)
- [“VNIC Allocation on the Gateway” on page 15](#)

Performing Basic Toolbox CLI Tasks

These tasks start and configure the Toolbox CLI interface.

- [“Toolbox CLI Overview” on page 17](#)
- [“Start the Toolbox CLI” on page 18](#)
- [“Display the Toolbox CLI Version” on page 19](#)
- [“Display the Toolbox CLI Settings” on page 19](#)
- [“Modify the Toolbox CLI Settings” on page 20](#)
- [“Toolbox CLI Settings Properties” on page 21](#)
- [“Enable or Disable the Toolbox CLI Daemon” on page 23](#)

Related Information

- [“Administering the Fabric Configuration \(Toolbox CLI\)” on page 25](#)
- [“Administering Partitions \(Toolbox CLI\)” on page 32](#)
- [“Administering Subnet Managers \(Toolbox CLI\)” on page 42](#)
- [“Administering Switches \(Toolbox CLI\)” on page 45](#)
- [“Administering Hosts \(Toolbox CLI\)” on page 51](#)
- [“Administering Logs \(Toolbox CLI\)” on page 58](#)

Toolbox CLI Overview

The Toolbox CLI is a new interface for firmware 2.2 that automates and simplifies IB partition management, fabric configuration, and other tasks and also provides information about the IB fabric.

The Toolbox CLI is started with the `toolbox` command from the restricted Linux shell and has the prompt:

```
[toolbox-cli]
```

Within the Toolbox CLI, the command structure is the following:

```
action1 object1 [action2|object2|option][option][option] . . .
```

where:

- *action1* is add, show, set, and so on.
- *object1* is partition, config, sm, and so on.

- *action2* is backup, disable, restore, and so on.
- *object2* is all, master, switch, and so on.
- *option* is ip=*IP_address*, pkey=*P_Key*, name=*name*, and so on.

For example, to display all ports that are members of the partition named testpartition, type:

```
[toolbox-cli] show partition name=testpartition ports
```

A description of the construct and components of the Toolbox CLI commands are in [“Understanding Toolbox CLI Commands” on page 102](#).

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“Display the Toolbox CLI Version” on page 19](#)
- [“Display the Toolbox CLI Settings” on page 19](#)
- [“Modify the Toolbox CLI Settings” on page 20](#)
- [“Toolbox CLI Settings Properties” on page 21](#)
- [“Enable or Disable the Toolbox CLI Daemon” on page 23](#)

▼ Start the Toolbox CLI

1. Access the Oracle ILOM CLI, and open the restricted Linux shell.

```
-> start /SYS/Fabric_Mgmt
Are you sure you want to start /SYS/Fabric_Mgmt (y/n)? y
```

NOTE: start /SYS/Fabric_Mgmt will launch a restricted Linux shell.
User can execute switch diagnosis, SM Configuration and IB monitoring commands in the shell. To view the list of commands, use "help" at rsh prompt.

Use exit command at rsh prompt to revert back to ILOM shell.

```
FabMan@hostname->
```

2. Start the Toolbox CLI.

```
FabMan@hostname-> toolbox
Starting NM2 Toolbox CLI v7.1 (type ? for help)
```

```
[toolbox-cli]
```

Related Information

- [“Toolbox CLI Overview” on page 17](#)
- [“Display the Toolbox CLI Version” on page 19](#)
- [“Display the Toolbox CLI Settings” on page 19](#)
- [“Modify the Toolbox CLI Settings” on page 20](#)
- [“Toolbox CLI Settings Properties” on page 21](#)
- [“Enable or Disable the Toolbox CLI Daemon” on page 23](#)

▼ Display the Toolbox CLI Version

- **In the Toolbox CLI, display the toolbox version.**

```
[toolbox-cli] show version
Toolbox Version: v6.1
[toolbox-cli]
```

Related Information

- [“Toolbox CLI Overview” on page 17](#)
- [“version Object Command” on page 110](#)
- [“Start the Toolbox CLI” on page 18](#)
- [“Display the Toolbox CLI Settings” on page 19](#)
- [“Modify the Toolbox CLI Settings” on page 20](#)
- [“Toolbox CLI Settings Properties” on page 21](#)
- [“Enable or Disable the Toolbox CLI Daemon” on page 23](#)

▼ Display the Toolbox CLI Settings

This procedure effectively reads properties and associated values from the `/etc/toolbox/conf/toolbox.conf` file.

- **In the Toolbox CLI, display the Toolbox CLI settings.**

```
[toolbox-cli] show settings [property]
```

where *property* is one of those provided in [“Toolbox CLI Settings Properties” on page 21](#). For example to display all Toolbox CLI settings, type:

```
[toolbox-cli] show settings
ACCESS_LOG : /var/log/toolbox_access.log
```

```
ALERTS_CHECK_TIME      : 30
ALERT_LOG              : /var/log/toolbox_alerts.log
API_KEY                : VyAu4EfcLpDNbf7FJCUmFgXbwd4
API_KEY_FILE           : /var/run/toolbox.key
AUTO_FENCE             : 0
BACKUP_DIR             : /etc/toolbox/backups
DAEMON_HOST            : 0.0.0.0
DAEMON_LOG             : /var/log/toolboxd.log
DAEMON_PORT            : 9999
DAEMON_VERBOSITY       : 1
DISABLED_PORT_ELAPSED_TIME : 10
EMAIL_ALERTS           : 1
FABRIC_CONF            : /etc/toolbox/conf/fabric.conf
GUID_REPLACEMENT       : 1
HCA_REPLACEMENT_ALERTS : 1
MAIL_SENDER            : toolbox@mailrelayserver.domain.com
MAIL_SEND_TO           : root@localhost.com
MAIL_SERVER            : devdashboard.mx.oracle.com
PORT_DISABLED_ALERTS   : 1
PRESERVE_FABRIC        : 0
PROTECT_FABRIC         : 1
SEND_MAIL              : 1
SM_LOG                 : /var/log/toolbox_sm.log
SSL_CERT               : /etc/toolbox/scripts/server.crt
SSL_KEY                : /etc/toolbox/scripts/server.key
[toolbox-cli]
```

Related Information

- [“Toolbox CLI Overview” on page 17](#)
- [“settings Object Commands” on page 108](#)
- [“Start the Toolbox CLI” on page 18](#)
- [“Display the Toolbox CLI Version” on page 19](#)
- [“Modify the Toolbox CLI Settings” on page 20](#)
- [“Toolbox CLI Settings Properties” on page 21](#)
- [“Enable or Disable the Toolbox CLI Daemon” on page 23](#)

▼ Modify the Toolbox CLI Settings

This procedure effectively configures the `/etc/toolbox/conf/toolbox.conf` file.

1. **In the Toolbox CLI, modify a Toolbox CLI parameter.**

```
[toolbox-cli] set settings property=value
```

where:

- *property* is from the table in [“Toolbox CLI Settings Properties” on page 21](#).
- *value* is the value for the *property*.

For example, to set the email address `nobody@yahoole.net` to receive email alerts, type:

```
[toolbox-cli] set settings MAIL_SEND_TO=nobody@yahoole.net
Done. Restart daemon for changes to take effect.
[toolbox-cli]
```

2. Restart the toolbox daemon.

See [“Enable or Disable the Toolbox CLI Daemon” on page 23](#).

Related Information

- [“Toolbox CLI Overview” on page 17](#)
- [“settings Object Commands” on page 108](#)
- [“Start the Toolbox CLI” on page 18](#)
- [“Display the Toolbox CLI Version” on page 19](#)
- [“Display the Toolbox CLI Settings” on page 19](#)
- [“Toolbox CLI Settings Properties” on page 21](#)
- [“Enable or Disable the Toolbox CLI Daemon” on page 23](#)

Toolbox CLI Settings Properties

This table lists the properties that can be used with the `settings` object, their description, and their default values.

| Property | Description | Default Value |
|-------------------|--|--|
| ACCESS_LOG | Toolbox CLI access log file. | <code>/var/log/toolbox_access.log</code> |
| ALERTS_CHECK_TIME | Polling interval for Toolbox CLI daemon to check for port events in between scans. In seconds. | <code>30</code> |
| ALERT_LOG | Toolbox CLI alert log file. | <code>/var/log/toolbox_alerts.log</code> |
| API_KEY | A 128-bit SHA key for authenticating REST requests. | <code>VyAu4EfcLpDNbf7FJCUmFgXbwd4</code> |
| API_KEY_FILE | Alternative key file for other authentication schemes. | <code>/var/run/toolbox.key</code> |
| AUTO_FENCE | Automatically fence off an unresponsive switch in the fabric. 0=no, 1=yes. | <code>0</code> |
| BACKUP_DIR | Directory where switch backup files are stored. | <code>/etc/toolbox/backups</code> |

Modify the Toolbox CLI Settings

| Property | Description | Default Value |
|----------------------------|---|------------------------------------|
| DAEMON_HOST | IP address of the host running the Toolbox CLI daemon to which the Toolbox CLI needs to communicate. For REST APIs to work from external clients, such as web browsers, set to 0.0.0.0 (all TCP). Otherwise, limit to local use only, and set to 127.0.0.1 (localhost). | 0.0.0.0 |
| DAEMON_LOG | Toolbox CLI daemon log file. | /var/log/toolboxd.log |
| DAEMON_PORT | Host port on which the Toolbox CLI needs to communicate with the Toolbox CLI daemon. | 9999 |
| DAEMON_VERBOSITY | Toolbox CLI daemon verbosity/debug level. 1=lowest, 9=highest. | 1 |
| DISABLED_PORT_ELAPSED_TIME | Minimum interval that must elapse to declare a port as disabled, in seconds. | 10 |
| EMAIL_ALERTS | Enable email alerts upon events. 0=no, 1=yes. | 1 |
| FABRIC_CONF | JSON configuration file read by the Toolbox CLI and daemon. Note - The Toolbox CLI can merge multiple configurations, if they are provided as a space-delimited list. For example: FABRIC_CONF="fabric1.conf fabric2.conf ..." | /etc/toolbox/conf/fabric.conf |
| GUID_REPLACEMENT | Allow GUID replacement in the fabric configuration when an HCA is replaced. 0=no, 1=yes. | 1 |
| HCA_REPLACEMENT_ALERTS | Send HCA replacement alerts. 0=no, 1=yes. | 1 |
| MAIL_SENDER | Email sender identity on mail server. Note - Leave blank if not using. | toolbox@mailrelayserver.domain.com |
| MAIL_SEND_TO | Comma-separated list of email addresses to receive email alerts. Note - Leave blank if not using. | root@localhost.com |
| MAIL_SERVER | Sendmail SMTP relay server IP address or host name. Note - Leave blank if not using. | mailrelayserver.domain.com |
| PORT_DISABLED_ALERTS | Send alerts on switch port enable or disable events. 0=no, 1=yes. | 1 |
| PRESERVE_FABRIC | Preserve actual fabric configuration, regardless of fabric configuration file. 0=enforce fabric configuration file, 1=ignore fabric configuration file and do not start the Toolbox CLI daemon. | 1 |
| PROTECT_FABRIC | Enforce subnet protection through M_Keys. 0=no, 1=yes. | 1 |
| SEND_MAIL | Enable sendmail to send email alerts upon events. 0=no, 1=yes. | 1 |
| SM_LOG | Switch event log. | /var/log/toolbox_sm.log |
| SSL_CERT | SSL certificate file. | /etc/toolbox/scripts/server.crt |
| SSL_KEY | SSL PEM key file. | /etc/toolbox/scripts/server.key |

Related Information

- [“Toolbox CLI Overview” on page 17](#)
- [“settings Object Commands” on page 108](#)
- [“Start the Toolbox CLI” on page 18](#)
- [“Display the Toolbox CLI Version” on page 19](#)
- [“Display the Toolbox CLI Settings” on page 19](#)
- [“Modify the Toolbox CLI Settings” on page 20](#)
- [“Enable or Disable the Toolbox CLI Daemon” on page 23](#)

▼ Enable or Disable the Toolbox CLI Daemon

The toolbox daemon monitors actions in the fabric management, and performs activities as a Subnet Manager agent. The toolbox daemon has secret M_Key privileges.

Note - To restart the toolbox daemon, first disable and then reenable it.

1. In the Toolbox CLI, enable or disable the toolbox daemon.

```
[toolbox-cli] set daemon state
```

where *state* is either *enable* or *disable*.

For example, to enable the toolbox daemon, type:

```
[toolbox-cli] set daemon enable
Are you sure you want to enable the Toolbox Daemon? (y/n): y
```

2. Consider your next step.

- **If the fabric configuration file is missing, you are asked if you want to create it using the fabric configuration wizard.**

```
fabric conf file(s) '/etc/toolbox/conf/fabric.conf' not found. Create file? (y/n)
[y]:
```

If the fabric configuration file is missing, create it.

See [“Run the Fabric Configuration Wizard \(Toolbox CLI\)” on page 27](#).

- **If the fabric configuration file exists, daemon initialization continues.**

```
Initializing... Setting up passwordless SSH... Parsed following
```

```
configuration:
1 fabric(s) specified in config.
Config Summary : -----
* Fabric 'TEST' (MKey: 0x3815345c5d4b4880) has 2 rack(s):
> Rack 'o4nm2' has 1 switch(es):
- o4nm2-gw-8 (10.172.144.13) , SM expected: 'enabled'
> Rack 'generic' has 1 switch(es):
- test324 (10.172.144.147) , SM expected: 'enabled'
```

3. If the daemon is being enabled after creating a fabric configuration file, you are asked for a password.

```
Do all these switches share the same 'ilom-admin' password? (y/n) [y]:
Switch 'ilom-admin' Password?: password
Confirm Password: password
```

The initialization continues.

```
No existing RSA keys found for toolbox
Enable toolbox user if not done so ..[OK]
Generating RSA key pair for toolbox ....[OK]
Setting up passwordless access for toolbox at 10.172.144.13 .....[OK]
Setting up passwordless access for toolbox at 10.172.144.147 .....[OK]
[OK]
Setting up sessions... [OK]
Verifying Switch FW versions in fabric... [OK]
Verifying SM states in fabric... [OK]
Acquiring Global Lock... [OK]
Single Master SM found: 10.172.144.13
Protecting Fabric(s) based on config provided ... [OK]
Determining Master SM node... [OK] : "o4nm2-gw-8"
Gathering fabric data... [OK]
Generating API Key... [OK]
Releasing Global Lock... [OK]
Starting daemon... [OK]
[toolbox-cli]
```

Related Information

- [“Toolbox CLI Overview” on page 17](#)
- [“daemon Object Command” on page 105](#)
- [“Start the Toolbox CLI” on page 18](#)
- [“Display the Toolbox CLI Version” on page 19](#)
- [“Display the Toolbox CLI Settings” on page 19](#)
- [“Modify the Toolbox CLI Settings” on page 20](#)
- [“Toolbox CLI Settings Properties” on page 21](#)

Administering the Fabric Configuration (Toolbox CLI)

These tasks display and manage the fabric configuration file.

- [“Display the Fabric Configuration File \(Toolbox CLI\)” on page 25](#)
- [“Fabric Configuration Wizard Overview” on page 26](#)
- [“Run the Fabric Configuration Wizard \(Toolbox CLI\)” on page 27](#)
- [“Add a Switch to the Fabric Configuration \(Toolbox CLI\)” on page 30](#)
- [“Remove a Switch From the Fabric Configuration \(Toolbox CLI\)” on page 31](#)
- [“Distribute the Fabric Configuration \(Toolbox CLI\)” on page 31](#)

Related Information

- [“Performing Basic Toolbox CLI Tasks” on page 17](#)
- [“Administering Partitions \(Toolbox CLI\)” on page 32](#)
- [“Administering Subnet Managers \(Toolbox CLI\)” on page 42](#)
- [“Administering Switches \(Toolbox CLI\)” on page 45](#)
- [“Administering Hosts \(Toolbox CLI\)” on page 51](#)
- [“Administering Logs \(Toolbox CLI\)” on page 58](#)

▼ Display the Fabric Configuration File (Toolbox CLI)

- **In the Toolbox CLI, display the fabric configuration file.**

```
[toolbox-cli] show config
1 fabric(s) specified in config.
Config Summary :
-----
* Fabric 'scao04-fabric' (MKey: 0x3815345c5d4b4880) has 1 rack(s):
  Rack 'scao04-rack' has 2 switch(es):
    - scao04sw-ibb0 (10.133.12.156) , SM expected: 'enabled'
    - scao04sw-iba0 (10.133.12.155) , SM expected: 'enabled'
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“config Object Commands” on page 104](#)
- [“Fabric Configuration Wizard Overview” on page 26](#)

- [“Run the Fabric Configuration Wizard \(Toolbox CLI\)” on page 27](#)
- [“Add a Switch to the Fabric Configuration \(Toolbox CLI\)” on page 30](#)
- [“Remove a Switch From the Fabric Configuration \(Toolbox CLI\)” on page 31](#)
- [“Distribute the Fabric Configuration \(Toolbox CLI\)” on page 31](#)

Fabric Configuration Wizard Overview

When the toolbox daemon is started, it looks for the `/etc/toolbox/conf/fabric.conf` file. If the file is missing, the daemon starts the fabric configuration wizard. The wizard is also started with the `set config wizard` command. If the toolbox daemon is running and the fabric configuration wizard is invoked, the daemon tries to discover the following parameters. If the daemon is not running or is unsuccessful, you must provide the parameters to the fabric configuration wizard. These are the parameters:

- Fabric name
- Fabric M_Key
- Fabric password
- Number of racks

For each rack:

- Rack name
- Rack family
- Rack type
- Number of switches

For the first switch:

- Host name
- Management controller IP address
- Password
- Subnet Manager state

For all subsequent switches:

- Host name
- Password
- Subnet Manager state

Note - The first fabric is considered the primary fabric, and the first switch of the first rack is considered to have the master Subnet Manager.

Related Information

- [“Display the Fabric Configuration File \(Toolbox CLI\)” on page 25](#)
- [“Run the Fabric Configuration Wizard \(Toolbox CLI\)” on page 27](#)
- [“Add a Switch to the Fabric Configuration \(Toolbox CLI\)” on page 30](#)
- [“Remove a Switch From the Fabric Configuration \(Toolbox CLI\)” on page 31](#)
- [“Distribute the Fabric Configuration \(Toolbox CLI\)” on page 31](#)

▼ Run the Fabric Configuration Wizard (Toolbox CLI)

1. In the Toolbox CLI, run the fabric configuration wizard and answer the questions accordingly.

Note - Press the Enter key to accept the default values, enclosed in square [] brackets.

See these examples:

- In this example, automatic discovery was used.

```
[toolbox-cli] set config wizard
  <<< TOOLBOX FABRIC CONFIG WIZARD >>>
Run wizard? (y/n) [n]: y

Fabric 1 Name? [none]: NSN
Fabric 'NSN' | MKey? [0x3815345c5d4b4880]:
Fabric 'NSN' | Password? (alphanumeric of length 8):
Fabric 'NSN' | Confirm Password:
Discovered the following racks:

[{'name': 'nsn178',
  'rack_family': 'generic',
  'rack_type': 'generic',
  'switches': [{'hostname': 'nsn178-157',
                'ip': '10.134.178.157',
                'type': 'leaf'},
               {'hostname': 'nsn178-159',
                'ip': '10.134.178.159',
                'type': 'spine'},
               {'hostname': 'nsn178-158',
                'ip': '10.134.178.158',
                'type': 'spine'}]}}
```

Looks good? (y/n) [y]:

Do all switches have SM enabled? (y/n) [y]:

Configuration will be saved in the following JSON format:

```
{'fabrics': [{'mkey': '0x3815345c5d4b4880',
              'name': 'NSN',
              'password': 'changeme',
              'racks': [{'name': 'nsn178',
                        'rack_family': 'generic',
                        'rack_type': 'generic',
                        'switches': [{'hostname': 'nsn178-157',
                                    'ip': '10.134.178.157',
                                    'sm': 'enabled',
                                    'type': 'leaf'},
                                   {'hostname': 'nsn178-159',
                                    'ip': '10.134.178.159',
                                    'sm': 'enabled',
                                    'type': 'spine'},
                                   {'hostname': 'nsn178-158',
                                    'ip': '10.134.178.158',
                                    'sm': 'enabled',
                                    'type': 'spine'}]}]}]}
```

Save config file as? [/etc/toolbox/conf/fabric.conf]:

Done. Generated config as: /etc/toolbox/conf/fabric.conf

Please restart daemon

[toolbox-cli]

- In this example, automatic discovery was switched to manual.

[toolbox-cli] **set config wizard**

<<< TOOLBOX FABRIC CONFIG WIZARD >>>

Run wizard? (y/n) [n]: **y**

Fabric 1 Name? [none]: TEST

Fabric 'ExadataCustomer' | MKey? [0x3815345c5d4b4880]:

Fabric 'ExadataCustomer' | Password? (alphanumeric of length 8):

Fabric 'ExadataCustomer' | Confirm Password:

Discovered the following racks:

```
[{'name': 'scac10sw',
  'rack_family': 'ED',
```

```

'rack_type': 'quarter/eighth',
'switches': [{ 'hostname': 'scac10sw-iba0',
               'ip': '10.128.74.171',
               'type': 'leaf'},
             { 'hostname': 'scac10sw-ibb0',
               'ip': '10.128.74.172',
               'type': 'leaf'}]}

Looks good? (y/n) [y]: n
Fabric 'TEST' | How many Racks? [1]:

Fabric 'TEST' | Rack 1 Name? [none]:
Fabric 'TEST' | Rack 'none' | Family? (ED/EL/SSC/BDA/none) [none]:
Fabric 'TEST' | Rack 'none' | Type? (full/half/quarter/eighth/none) [none]:
Fabric 'TEST' | Rack 'none' | How many Switches? [1]:

Fabric 'TEST' | Rack 'none' | Switch 1 hostname?: abc
Fabric 'TEST' | Rack 'none' | Switch 'abc' | IP?: 1.1.1.1
Fabric 'TEST' | Rack 'none' | Switch 'abc' | SM state? [enabled]:

Configuration will be saved in the following JSON format:

{'fabrics': [{ 'mkey': '0x3815345c5d4b4880',
               'name': 'TEST',
               'password': 'welcome1',
               'racks': [{ 'family': 'none',
                           'name': 'none',
                           'switches': [{ 'hostname': 'abc',
                                           'ip': '1.1.1.1',
                                           'sm': 'enabled'}]},
                           'type': 'none'}]}]}

Save config file as? [/etc/toolbox/conf/fabric.conf]:
[toolbox-cli]

```

2. Restart the toolbox daemon.

See [“Enable or Disable the Toolbox CLI Daemon” on page 23](#).

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“config Object Commands” on page 104](#)
- [“Display the Fabric Configuration File \(Toolbox CLI\)” on page 25](#)

- [“Fabric Configuration Wizard Overview”](#) on page 26
- [“Add a Switch to the Fabric Configuration \(Toolbox CLI\)”](#) on page 30
- [“Remove a Switch From the Fabric Configuration \(Toolbox CLI\)”](#) on page 31
- [“Distribute the Fabric Configuration \(Toolbox CLI\)”](#) on page 31

▼ Add a Switch to the Fabric Configuration (Toolbox CLI)

1. In the Toolbox CLI, add a switch to the fabric configuration.

```
[toolbox-cli] add switch name=switch_name ip=IP_address rack='rack_name' fabric='fabric_name' sm=state
```

where:

- *switch_name* is the host name of the switch.
- *IP_address* is the IP address of the management controller of the switch.
- *rack_name* is the name of the rack where the switch is located.
- *fabric_name* is the name of the fabric where the switch is added.
- *state* is the state of the Subnet Manager on that switch, enabled or disabled.

For example, to add a switch with host name *scao04sw-iba0*, IP address 10.133.12.155, in rack *scao04-rack* and fabric *scao04-fabric* with the Subnet Manager enabled, type:

```
[toolbox-cli] add switch name=scao04sw-iba0 ip=10.133.12.155 rack='scao04-rack'
fabric='scao04-fabric' sm=enabled
'scao04sw-iba0' root password: password
Updating fabric conf file: /etc/toolbox/conf/fabric.conf... [OK]
Added 'scao04sw-iba0' (10.133.12.155) to fabric: 'scao04-fabric', rack: 'scao04-rack'
[toolbox-cli]
```

2. Restart the toolbox daemon.

See [“Enable or Disable the Toolbox CLI Daemon”](#) on page 23.

Related Information

- [“Start the Toolbox CLI”](#) on page 18
- [“switch Object Commands”](#) on page 109
- [“Display the Fabric Configuration File \(Toolbox CLI\)”](#) on page 25
- [“Fabric Configuration Wizard Overview”](#) on page 26
- [“Run the Fabric Configuration Wizard \(Toolbox CLI\)”](#) on page 27
- [“Remove a Switch From the Fabric Configuration \(Toolbox CLI\)”](#) on page 31
- [“Distribute the Fabric Configuration \(Toolbox CLI\)”](#) on page 31

▼ Remove a Switch From the Fabric Configuration (Toolbox CLI)

1. In the Toolbox CLI, remove a switch from the fabric configuration.

```
[toolbox-cli] remove switch ip=IP_address|name=switch_name
```

where:

- *IP_address* is the IP address of the management controller of the switch.
- *switch_name* is the host name of the switch.

For example, to remove the switch with host name `scao04sw-iba0` from the fabric configuration, type:

```
[toolbox-cli] remove switch name=scao04sw-iba0
Are you sure you want to remove switch 'name="scao04sw-iba0"'? (y/n): y
Updating fabric conf file: /etc/toolbox/conf/fabric.conf... [OK]
```

2. Restart the toolbox daemon.

See [“Enable or Disable the Toolbox CLI Daemon” on page 23](#).

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“switch Object Commands” on page 109](#)
- [“Display the Fabric Configuration File \(Toolbox CLI\)” on page 25](#)
- [“Fabric Configuration Wizard Overview” on page 26](#)
- [“Run the Fabric Configuration Wizard \(Toolbox CLI\)” on page 27](#)
- [“Add a Switch to the Fabric Configuration \(Toolbox CLI\)” on page 30](#)
- [“Distribute the Fabric Configuration \(Toolbox CLI\)” on page 31](#)

▼ Distribute the Fabric Configuration (Toolbox CLI)

Once a fabric configuration file has been created, it can be distributed to all switches in the fabric configuration, eliminating the need to create a fabric configuration file on each switch.

1. In the Toolbox CLI, distribute the fabric configuration.

```
[toolbox-cli] set config copy ip=peer_IP_address|name=peer_hostname|all
```

where:

- *peer_IP_address* is the IP address of the switch to receive the fabric configuration.
- *peer_hostname* is the host name of the switch to receive the fabric configuration.

For example, to distribute the fabric configuration on the current switch to all other switches in the fabric configuration, type:

```
[toolbox-cli] set config copy all
Are you sure you want to copy fabric config to other switch(es)? (WARNING: will
  overwrite existing config on other end!) (y/n): y
Copying fabric config [/etc/toolbox/conf/fabric.conf] to 10.134.178.158 .. [OK]
Copying fabric config [/etc/toolbox/conf/fabric.conf] to 10.134.178.159 .. [OK]
Copying fabric config [/etc/toolbox/conf/fabric.conf] to 10.134.178.157 .. [OK]
[toolbox-cli]
```

2. Restart the toolbox daemon on the switches that received the fabric configuration.

See [“Enable or Disable the Toolbox CLI Daemon” on page 23](#).

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“config Object Commands” on page 104](#)
- [“Display the Fabric Configuration File \(Toolbox CLI\)” on page 25](#)
- [“Fabric Configuration Wizard Overview” on page 26](#)
- [“Run the Fabric Configuration Wizard \(Toolbox CLI\)” on page 27](#)
- [“Add a Switch to the Fabric Configuration \(Toolbox CLI\)” on page 30](#)
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Administering Partitions (Toolbox CLI)

These tasks display and manage partitions.

- [“Display a Partition \(Toolbox CLI\)” on page 33](#)
- [“Display the Ports of All Partitions \(Toolbox CLI\)” on page 34](#)
- [“Display the Partitions With a Particular Port \(Toolbox CLI\)” on page 35](#)
- [“Create a Partition \(Toolbox CLI\)” on page 36](#)
- [“Modify a Partition \(Toolbox CLI\)” on page 37](#)
- [“Add a Port to a Partition \(Toolbox CLI\)” on page 38](#)
- [“Modify a Port of a Partition \(Toolbox CLI\)” on page 39](#)

- [“Remove a Port From a Partition \(Toolbox CLI\)”](#) on page 40
- [“Remove a Partition \(Toolbox CLI\)”](#) on page 41

Related Information

- [“Performing Basic Toolbox CLI Tasks”](#) on page 17
- [“Administering the Fabric Configuration \(Toolbox CLI\)”](#) on page 25
- [“Administering Subnet Managers \(Toolbox CLI\)”](#) on page 42
- [“Administering Switches \(Toolbox CLI\)”](#) on page 45
- [“Administering Hosts \(Toolbox CLI\)”](#) on page 51
- [“Administering Logs \(Toolbox CLI\)”](#) on page 58

▼ Display a Partition (Toolbox CLI)

- **In the Toolbox CLI, display a partition.**

```
[toolbox-cli] show partition name=name|pkey=P_Key|all
```

where:

- *name* is the name of the partition.
- *P_Key* is the partition key.

For example, to display all of the partitions, type:

```
[toolbox-cli] show partition all
NAME          PKEY    FLAGS
-----
SUN_DCS       0001    ipoib
nm2-box1      3342    ipoib, defmember=full
nm2-box2      3343
nm2-box       3341
nm2-box3      3344    ipoib, defmember=both
Default       7fff    ipoib
nm2-box4      3345    ipoib, defmember=full
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI”](#) on page 18
- [“partition Object Commands”](#) on page 107
- [“Display the Ports of All Partitions \(Toolbox CLI\)”](#) on page 34

- “Display the Partitions With a Particular Port (Toolbox CLI)” on page 35
- “Create a Partition (Toolbox CLI)” on page 36
- “Modify a Partition (Toolbox CLI)” on page 37
- “Add a Port to a Partition (Toolbox CLI)” on page 38
- “Modify a Port of a Partition (Toolbox CLI)” on page 39
- “Remove a Port From a Partition (Toolbox CLI)” on page 40
- “Remove a Partition (Toolbox CLI)” on page 41

▼ Display the Ports of All Partitions (Toolbox CLI)

- In the Toolbox CLI, display partition(s) associated with a particular port .

```
[toolbox-cli] show partition all ports
```

```
NAME      : SUN_DCS
PKEY     : 0001
FLAGS    : ipoib
GUID     : MEMBER
-----
ALL_SWITCHES  full

NAME      : nm2-box1
PKEY     : 3342
FLAGS    : ipoib, defmember=full
GUID     : MEMBER
-----
0x0002c9030008e137  full
0x00212800013ecea0  both

NAME      : nm2-box2
PKEY     : 3343
FLAGS    :
GUID     : MEMBER
-----
0x0002c9030008e137  limited

NAME      : Default
PKEY     : 7fff
FLAGS    : ipoib
GUID     : MEMBER
-----
ALL_CAS      full
ALL_SWITCHES full
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“partition Object Commands” on page 107](#)
- [“Display a Partition \(Toolbox CLI\)” on page 33](#)
- [“Display the Partitions With a Particular Port \(Toolbox CLI\)” on page 35](#)
- [“Create a Partition \(Toolbox CLI\)” on page 36](#)
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- [“Add a Port to a Partition \(Toolbox CLI\)” on page 38](#)
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- [“Remove a Port From a Partition \(Toolbox CLI\)” on page 40](#)
- [“Remove a Partition \(Toolbox CLI\)” on page 41](#)

▼ Display the Partitions With a Particular Port (Toolbox CLI)

- In the Toolbox CLI, display the partition with a particular port.

```
[toolbox-cli] show partition port=GUID
```

where *GUID* is the port GUID, ALL_CAS, or ALL_SWITCHES.

For example, to display the partitions having port GUID 0x00212800013ecea0, type:

```
[toolbox-cli] show partition port=0x00212800013ecea0
NAME          PKEY    FLAGS                                PORT
-----
nm2-box1      3342    ipoib, defmember=full               0x00212800013ecea0=both
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“partition Object Commands” on page 107](#)
- [“Display a Partition \(Toolbox CLI\)” on page 33](#)
- [“Display the Ports of All Partitions \(Toolbox CLI\)” on page 34](#)
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- [“Remove a Partition \(Toolbox CLI\)” on page 41](#)

▼ Create a Partition (Toolbox CLI)

1. In the Toolbox CLI, create a partition.

```
[toolbox-cli] add partition name=name pkey=P_Key [-defmember=full|limited|both] [-ipoib=True [-sl=sl] | [-rate=rate] | [-scope=scope] | [-mtu=mtu]]
```

where:

- *name* is the partition name.
- *P_Key* is the partition key.
- *sl* is the service level.
- *rate* is the rate.
- *scope* is the scope.
- *mtu* is the mtu.

For example, to create a partition with name `test4`, `P_Key 1122`, both membership, and IPoIB functionality with service level 4, type:

```
[toolbox-cli] add partition name=test4 pkey=1122 -defmember=both -ipoib=True -sl=4
[toolbox-cli]
```

For more information on managing the partition configuration, refer to the *Sun Datacenter InfiniBand Switch 36 HTML Document Collection for Firmware Version 2.1* at: https://docs.oracle.com/cd/E36265_01/html/E36266/z40000081987669.html#scrolltoc.

2. Verify that the partition was created.

```
[toolbox-cli] show partition name=test2
NAME      PKEY      FLAGS
-----
test4     1122      ipoib, sl=4, defmember=both
[toolbox-cli]
```

Related Information

- “Start the Toolbox CLI” on page 18
- “partition Object Commands” on page 107
- “Display a Partition (Toolbox CLI)” on page 33
- “Display the Ports of All Partitions (Toolbox CLI)” on page 34
- “Display the Partitions With a Particular Port (Toolbox CLI)” on page 35
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- “Add a Port to a Partition (Toolbox CLI)” on page 38

- [“Modify a Port of a Partition \(Toolbox CLI\)” on page 39](#)
- [“Remove a Port From a Partition \(Toolbox CLI\)” on page 40](#)
- [“Remove a Partition \(Toolbox CLI\)” on page 41](#)

▼ Modify a Partition (Toolbox CLI)

1. In the Toolbox CLI, modify a partition.

```
[toolbox-cli] set partition name=name|pkey=P_Key [name==oldname -newname==newname][-defmember=full|limited|both][-ipoib=True [-sl=sl][|-rate=rate][|-scope=scope][|-mtu=mtu]]
```

where:

- *name* is the partition name.
- *P_Key* is the partition key.
- *oldname* is the current partition name.
- *newname* is the new partition name.
- *sl* is the service level.
- *rate* is the rate.
- *scope* is the scope.
- *mtu* is the mtu.

For example, to add IPoIB functionality with service level 5 and rate 4 to the partition named test4, type:

```
[toolbox-cli] set partition name=test4 -ipoib=True -sl=5 -rate=4
[toolbox-cli]
```

2. Verify that the partition was modified.

```
[toolbox-cli] show partition name=test4
NAME      PKEY      FLAGS
-----
test4     1122      ipoib, rate=4, sl=5
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“partition Object Commands” on page 107](#)
- [“Display a Partition \(Toolbox CLI\)” on page 33](#)
- [“Display the Ports of All Partitions \(Toolbox CLI\)” on page 34](#)

- [“Display the Partitions With a Particular Port \(Toolbox CLI\)” on page 35](#)
- [“Create a Partition \(Toolbox CLI\)” on page 36](#)
- [“Add a Port to a Partition \(Toolbox CLI\)” on page 38](#)
- [“Modify a Port of a Partition \(Toolbox CLI\)” on page 39](#)
- [“Remove a Port From a Partition \(Toolbox CLI\)” on page 40](#)
- [“Remove a Partition \(Toolbox CLI\)” on page 41](#)

▼ Add a Port to a Partition (Toolbox CLI)

1. In the Toolbox CLI, add a port to the partition.

```
[toolbox-cli] set partition name=name|pkey=P_Key add port portguid=GUID [-m=full|limited|both]
```

where:

- *name* is the partition name.
- *P_Key* is the partition key.
- *GUID* is the port GUID.

For example, to add a port with GUID `0x0002c903000891ac` and limited membership to the partition with *P_Key* 1122, type:

```
[toolbox-cli] set partition pkey=1122 add port portguid=0x0002c903000891ac -m=limited
[toolbox-cli]
```

2. Verify that the port was added.

```
[toolbox-cli] show partition pkey=1122 ports
NAME      : test4
PKEY      : 1122
FLAGS     : ipoib, rate=4, sl=5
GUID      MEMBER
-----
0x0002c903000891ac  limited
0x0002c90300089240
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“partition Object Commands” on page 107](#)
- [“Display a Partition \(Toolbox CLI\)” on page 33](#)
- [“Display the Ports of All Partitions \(Toolbox CLI\)” on page 34](#)

- [“Display the Partitions With a Particular Port \(Toolbox CLI\)” on page 35](#)
- [“Create a Partition \(Toolbox CLI\)” on page 36](#)
- [“Modify a Partition \(Toolbox CLI\)” on page 37](#)
- [“Modify a Port of a Partition \(Toolbox CLI\)” on page 39](#)
- [“Remove a Port From a Partition \(Toolbox CLI\)” on page 40](#)
- [“Remove a Partition \(Toolbox CLI\)” on page 41](#)

▼ Modify a Port of a Partition (Toolbox CLI)

1. In the Toolbox CLI, modify a port to the partition.

```
[toolbox-cli] set partition name=name|pkey=P_Key set port portguid=GUID [-m=full|
limited|both]
```

where:

- *name* is the partition name.
- *P_Key* is the partition key.
- *GUID* is the port GUID.

For example, to set the port with GUID `0x0002c903000891ac` in the partition with P_Key 1122 to full membership, type:

```
[toolbox-cli] set partition pkey=1122 set port portguid=0x0002c903000891ac -m=full
[toolbox-cli]
```

2. Verify that the membership was modified.

```
[toolbox-cli] show partition pkey=1122 ports
NAME      : test4
PKEY      : 1122
FLAGS     : ipoib, rate=4, sl=5
GUID      MEMBER
-----
0x0002c903000891ac    full
0x0002c90300089240
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“partition Object Commands” on page 107](#)
- [“Display a Partition \(Toolbox CLI\)” on page 33](#)

- [“Display the Ports of All Partitions \(Toolbox CLI\)” on page 34](#)
- [“Display the Partitions With a Particular Port \(Toolbox CLI\)” on page 35](#)
- [“Create a Partition \(Toolbox CLI\)” on page 36](#)
- [“Modify a Partition \(Toolbox CLI\)” on page 37](#)
- [“Add a Port to a Partition \(Toolbox CLI\)” on page 38](#)
- [“Remove a Port From a Partition \(Toolbox CLI\)” on page 40](#)
- [“Remove a Partition \(Toolbox CLI\)” on page 41](#)

▼ Remove a Port From a Partition (Toolbox CLI)

1. In the Toolbox CLI, remove a port from the partition.

```
[toolbox-cli] set partition name=name|pkey=P_Key remove port portguid=GUID
```

where:

- *name* is the partition name.
- *P_Key* is the partition key.
- *GUID* is the port GUID.

For example, to remove the port with GUID `0x0002c90300089240` from the partition with *P_Key* `1122`, type:

```
[toolbox-cli] set partition pkey=1122 remove port portguid=0x0002c90300089240
Are you sure you want to remove partition port 'portguid="0x0002c90300089240"'? (y/n): y
[toolbox-cli]
```

There is also a "no confirm" mode where you can specify a `-y` flag when removing a partition to disable the confirmation prompt.

2. Verify that the port was removed.

```
[toolbox-cli] show partition pkey=1122 ports
NAME      : test4
PKEY      : 1122
FLAGS     : ipoib, rate=4, sl=5
GUID      MEMBER
-----
0x0002c903000891ac  full
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)

- [“partition Object Commands” on page 107](#)
- [“Display a Partition \(Toolbox CLI\)” on page 33](#)
- [“Display the Ports of All Partitions \(Toolbox CLI\)” on page 34](#)
- [“Display the Partitions With a Particular Port \(Toolbox CLI\)” on page 35](#)
- [“Create a Partition \(Toolbox CLI\)” on page 36](#)
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- [“Modify a Port of a Partition \(Toolbox CLI\)” on page 39](#)
- [“Remove a Partition \(Toolbox CLI\)” on page 41](#)

▼ Remove a Partition (Toolbox CLI)

1. In the Toolbox CLI, remove the partition.

```
[toolbox-cli] remove partition name=name|pkey=P_Key
```

where:

- *name* is the partition name.
- *P_Key* is the partition key.

For example, to remove the partition with P_Key 1122, type:

```
[toolbox-cli] remove partition pkey=1122
Are you sure you want to remove partition 'pkey="1122"'? (y/n): y
[toolbox-cli]
```

2. Verify that the partition was removed.

```
[toolbox-cli] show partition name=all
NAME          PKEY    FLAGS
-----
SUN_DCS       0001    ipoib
nm2-box1      3342    ipoib, defmember=full
nm2-box2      3343
nm2-box       3341
nm2-box3      3344    ipoib, defmember=both
Default       7fff    ipoib
nm2-box4      3345    ipoib, defmember=full
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)

- “partition Object Commands” on page 107
- “Display a Partition (Toolbox CLI)” on page 33
- “Display the Ports of All Partitions (Toolbox CLI)” on page 34
- “Display the Partitions With a Particular Port (Toolbox CLI)” on page 35
- “Create a Partition (Toolbox CLI)” on page 36
- “Modify a Partition (Toolbox CLI)” on page 37
- “Add a Port to a Partition (Toolbox CLI)” on page 38
- “Modify a Port of a Partition (Toolbox CLI)” on page 39
- “Remove a Port From a Partition (Toolbox CLI)” on page 40

Administering Subnet Managers (Toolbox CLI)

These tasks display and manage Subnet Managers.

- “Display Subnet Manager Status (Toolbox CLI)” on page 42
- “Enable or Disable a Subnet Manager (Toolbox CLI)” on page 43
- “Configure a Subnet Manager (Toolbox CLI)” on page 44

Related Information

- “Performing Basic Toolbox CLI Tasks” on page 17
- “Administering the Fabric Configuration (Toolbox CLI)” on page 25
- “Administering Partitions (Toolbox CLI)” on page 32
- “Administering Switches (Toolbox CLI)” on page 45
- “Administering Hosts (Toolbox CLI)” on page 51
- “Administering Logs (Toolbox CLI)” on page 58

▼ Display Subnet Manager Status (Toolbox CLI)

- **In the Toolbox CLI, display the Subnet Manager status.**

```
[toolbox-cli] show sm all|master
```

For example, to display all Subnet Manager status, type:

```
[toolbox-cli] show sm all
```

```

nsn156-102 (10.134.156.102)
-----
SM:                STANDBY
STATE:             enabled
PRIORITY:         4
CONTROLLED_HANOVER: TRUE
SUBNET_PREFIX:    0xfe80000000000000
MKEY:             None
ROUTING_ENGINE:   FatTree

nsn156-81 (10.134.156.81)
-----
SM:                MASTER
STATE:             enabled
PRIORITY:         0
CONTROLLED_HANOVER: TRUE
SUBNET_PREFIX:    0xfe80000000000000
MKEY:             None
ROUTING_ENGINE:   FatTree
[toolbox-cli]

```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“sm Object Commands” on page 109](#)
- [“Enable or Disable a Subnet Manager \(Toolbox CLI\)” on page 43](#)
- [“Configure a Subnet Manager \(Toolbox CLI\)” on page 44](#)

▼ Enable or Disable a Subnet Manager (Toolbox CLI)

- **In the Toolbox CLI, enable or disable the Subnet Manager.**

```
[toolbox-cli] set sm name=name|ip=IP_address action=state
```

where:

- *name* is the host name of the switch hosting the Subnet Manager.
- *IP_address* is the IP address of the management controller of the switch.
- *state* is either enabled or disabled.

For example, to enable the Subnet Manager on a host with host name nsn156-102, type:

```
[toolbox-cli] set sm name=nsn156-102 action=enable
Are you sure you want to enable SM on 10.134.156.102? (y/n): y
Performing enable SM on 10.134.156.102... [OK]
```

```
Sleeping for 10 seconds to let SM state change happen... [OK]
Verifying SM states in fabric... [OK]
Acquiring Global Lock... [OK]
Protecting Fabric(s) based on MKey(s) provided ... [OK]
Determining Master SM node... [OK] : "nsn156-81"
Gathering fabric data... [OK]
Releasing Global Lock... [OK]
Updating fabric conf file: /etc/toolbox/conf/fabric.conf... [OK]
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“sm Object Commands” on page 109](#)
- [“Display Subnet Manager Status \(Toolbox CLI\)” on page 42](#)
- [“Configure a Subnet Manager \(Toolbox CLI\)” on page 44](#)

▼ Configure a Subnet Manager (Toolbox CLI)

1. **In the Toolbox CLI, disable the Subnet Manager to be configured.**

See [“Enable or Disable a Subnet Manager \(Toolbox CLI\)” on page 43](#).

2. **Configure the Subnet Manager.**

```
[toolbox-cli] set sm name=name|ip=IP_address -priority=priority|-controlledhandover={TRUE|
FALSE}|-prefix=prefix|-mkey=M_Key
```

where:

- *name* is the host name of the switch hosting the Subnet Manager.
- *IP_address* is the IP address of the management controller of the switch.
- *priority* is the Subnet Manager priority.
- *prefix* is the Subnet Manager prefix.
- *M_Key* is the management key.

For example, to set the priority to 3, disable controlled handover, and set the management key to `0xa00000000001` for the Subnet Manager with name `nsn156-102`, type:

```
[toolbox-cli] set sm name=nsn156-102 -priority=3 -controlledhandover=FALSE -
mkey=0xa00000000001
[toolbox-cli]
```

3. **Verify the configuration changes.**

```
[toolbox-cli] show sm all

nsn156-102 (10.134.156.102)
-----
SM:                STANDBY
STATE:             disabled
PRIORITY:          3
CONTROLLED_HANOVER: FALSE
SUBNET_PREFIX:     0xfe80000000000000
MKEY:              0xa0000000000001
ROUTING_ENGINE:    FatTree

nsn156-81 (10.134.156.81)
-----
SM:                MASTER
STATE:             enabled
PRIORITY:          0
CONTROLLED_HANOVER: TRUE
SUBNET_PREFIX:     0xfe80000000000000
MKEY:              None
ROUTING_ENGINE:    FatTree
[toolbox-cli]
```

4. Enable the Subnet Manager.

See [“Enable or Disable a Subnet Manager \(Toolbox CLI\)”](#) on page 43.

Related Information

- [“Start the Toolbox CLI”](#) on page 18
- [“sm Object Commands”](#) on page 109
- [“Display Subnet Manager Status \(Toolbox CLI\)”](#) on page 42
- [“Enable or Disable a Subnet Manager \(Toolbox CLI\)”](#) on page 43

Administering Switches (Toolbox CLI)

These tasks display and manage switches.

- [“Display Switch Information \(Toolbox CLI\)”](#) on page 46
- [“Display Switch Backups \(Toolbox CLI\)”](#) on page 46
- [“Back Up a Switch Configuration \(Toolbox CLI\)”](#) on page 47
- [“Disable a Switch \(Toolbox CLI\)”](#) on page 48

- [“Restore a Switch \(Toolbox CLI\)” on page 49](#)

Related Information

- [“Performing Basic Toolbox CLI Tasks” on page 17](#)
- [“Administering the Fabric Configuration \(Toolbox CLI\)” on page 25](#)
- [“Administering Partitions \(Toolbox CLI\)” on page 32](#)
- [“Administering Subnet Managers \(Toolbox CLI\)” on page 42](#)
- [“Administering Hosts \(Toolbox CLI\)” on page 51](#)
- [“Administering Logs \(Toolbox CLI\)” on page 58](#)

▼ Display Switch Information (Toolbox CLI)

- **In the Toolbox CLI, display switch information.**

```
[toolbox-cli] show switches
GUID                               NODE DESCRIPTION                               VERSION
TOOLBOX EXISTS                     TOOLBOX STATE                                     -----
-----
0x002128b81684c0a0                SUN IB QDR GW switch nsn156-81 10.134.156.81    2.1.7-2
yes                                disabled
0x0010e0801bfca0a0                SUN DCS 36P QDR nsn156-47 10.134.156.47        --
--
0x002128ebca1ec0a0                SUN IB QDR GW switch nsn156-102 10.134.156.102 2.1.6-2
yes                                enabled
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“switches Object Command” on page 110](#)
- [“Display Switch Backups \(Toolbox CLI\)” on page 46](#)
- [“Back Up a Switch Configuration \(Toolbox CLI\)” on page 47](#)
- [“Disable a Switch \(Toolbox CLI\)” on page 48](#)
- [“Restore a Switch \(Toolbox CLI\)” on page 49](#)

▼ Display Switch Backups (Toolbox CLI)

This task displays all backups available on all switches in the fabric configuration.

- **In the Toolbox CLI, display the switch backups.**

```
[toolbox-cli] show backups

Found following backups:

10.134.178.159 :
    160603061008_nsn178-158_e_[nsn178]_[NSN].bck
    160603061017_nsn178-157_e_[nsn178]_[NSN].bck

10.134.178.158 :
    160603061012_nsn178-159_e_[nsn178]_[NSN].bck
    160603061017_nsn178-157_e_[nsn178]_[NSN].bck

10.134.178.157 :
    160603061008_nsn178-158_e_[nsn178]_[NSN].bck
    160603061012_nsn178-159_e_[nsn178]_[NSN].bck
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“backups Object Command” on page 104](#)
- [“Display Switch Information \(Toolbox CLI\)” on page 46](#)
- [“Back Up a Switch Configuration \(Toolbox CLI\)” on page 47](#)
- [“Disable a Switch \(Toolbox CLI\)” on page 48](#)
- [“Restore a Switch \(Toolbox CLI\)” on page 49](#)

▼ Back Up a Switch Configuration (Toolbox CLI)

The backup operation copies the backup file to every switch in the Toolbox CLI fabric configuration file.

Note - The command requires you to provide a *passphrase*, and the *ilom-admin* user's *password* as security measures.

- **In the Toolbox CLI, back up the switch configuration..**

```
[toolbox-cli] set config backup switch=name|all
```

where *name* is the host name of the switch hosting the Subnet Manager. For example, to back up the switch with host name *nsn178-158*, type:

```
[toolbox-cli] set config backup switch=nsn178-158
passphrase: passphrase
The backup will use passphrase 'p*****'. Do you want to continue? (y/n): y
ilom-admin password: password
Copying ilom backup from nsn178-158 to nsn178-159... [OK]
Copying ilom backup from nsn178-158 to nsn178-157... [OK]
[toolbox-cli]
```

For example, to back up all switches in the toolbox fabric configuration file, type:

```
[toolbox-cli] set config backup all
passphrase: passphrase
The backup will use passphrase 'w*****'. Do you want to continue? (y/n): y
ilom-admin password: password
Copying ilom backup from nsn178-158 to nsn178-159... [OK]
Copying ilom backup from nsn178-158 to nsn178-157... [OK]
Copying ilom backup from nsn178-159 to nsn178-158... [OK]
Copying ilom backup from nsn178-159 to nsn178-157... [OK]
Copying ilom backup from nsn178-157 to nsn178-158... [OK]
Copying ilom backup from nsn178-157 to nsn178-159... [OK]
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“config Object Commands” on page 104](#)
- [“Display Switch Information \(Toolbox CLI\)” on page 46](#)
- [“Display Switch Backups \(Toolbox CLI\)” on page 46](#)
- [“Disable a Switch \(Toolbox CLI\)” on page 48](#)
- [“Restore a Switch \(Toolbox CLI\)” on page 49](#)

▼ Disable a Switch (Toolbox CLI)

Note - You cannot disable the switch which you are running the toolbox on.

- **In the Toolbox CLI, disable a switch.**

```
[toolbox-cli] set config disable ip=IP_address|switch=name new_mkey=M_Key
```

where:

- *IP_address* is the IP address of the management controller of the switch.

- *name* is the host name of the switch hosting the Subnet Manager.
- *M_Key* is the new management key.

For example, to disable the switch with host name nsn178-158 with new management key *random* (optionally this can be overwritten to a custom value), type:

```
[toolbox-cli] set config disable switch=nsn178-158 new_mkey=random
Switch nsn178-158 will be disabled (5 backups found). Do you want to continue?(y/n) y
Disabling toolbox user and removing associated keys... [OK]
Verifying SM states in fabric... [OK]
Acquiring Global Lock... [OK]
Protecting Fabric(s) based on config provided ... [OK]
Determining Master SM node... [OK] : "nsn178-159"
Gathering fabric data... [OK]
Releasing Global Lock... [OK]
Updating fabric conf file: /etc/toolbox/conf/fabric.conf... [OK]
Verifying Switch FW versions in fabric... [OK]
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“config Object Commands” on page 104](#)
- [“Display Switch Information \(Toolbox CLI\)” on page 46](#)
- [“Display Switch Backups \(Toolbox CLI\)” on page 46](#)
- [“Back Up a Switch Configuration \(Toolbox CLI\)” on page 47](#)
- [“Restore a Switch \(Toolbox CLI\)” on page 49](#)

▼ Restore a Switch (Toolbox CLI)

Note - The command requires you to provide the *passphrase* for when the backup was made, and the *ilom-admin* user's *password* as security measures.

● In the Toolbox CLI, restore a switch.

```
[toolbox-cli] set config restore new_ip=local_IP_address old_sm=sm_name {local
backup=filename|peer {name=peer_hostname|ip=peer_IP_address} backup=filename|remote
backup=URL fabric=fabric_name rack=rack_name} [sm_state]
```

where:

- *local_IP_address* is the IP address of the management controller of the new switch that is being provisioned as a replacement.

- *sm_name* is the host name of the old switch that is being replaced.
- *filename* is the file name of the backup configuration.
- *peer_hostname* is the host name of the peer switch that has the backup file needed for restoring the settings on the new switch.
- *peer_IP_address* is the IP address of the peer switch.
- *URL* is the URL of the remote server backup file location.
- *fabric_name* is the name of the fabric to which the switch will belong.
- *rack_name* is the name of the rack to which the switch will belong.
- *sm_state* is the state of the Subnet Manger after restoration, either enabled or disabled.

Note - You can change the IP address of the management controller, and set the state of the Subnet Manager, when you restore the switch.

For example, to restore switch with IP address 10.134.178.158 and host name nsn178-158 with backup file 160519050245_nsn178-158_e_[nsn178]_[NSN_Fabric].bck, type:

```
[toolbox-cli] set config restore new_ip=10.134.178.158 old_sm=nsn178-158 local
backup=160519050245_nsn178-158_e_[nsn178]_[NSN_Fabric].bck
10.134.178.158 ilom-admin password: password
passphrase: passphrase
The backup will use passphrase 'w*****'. Do you want to continue? (y/n): y
Setting up passwordless access for toolbox at 10.134.178.158 .....[OK]
Restoring switch to nsn178-158... [OK]
Sleeping for 10 seconds to let SM state change happen... [OK]
Acquiring Global Lock... [OK]
Sleeping for 20 seconds to let replication take effect... [OK]
Updating fabric conf file: /etc/toolbox/conf/fabric.conf... [OK]
Verifying Switch FW versions in fabric... [OK]
Releasing Global Lock... [OK]

[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“config Object Commands” on page 104](#)
- [“Display Switch Information \(Toolbox CLI\)” on page 46](#)
- [“Display Switch Backups \(Toolbox CLI\)” on page 46](#)
- [“Back Up a Switch Configuration \(Toolbox CLI\)” on page 47](#)
- [“Disable a Switch \(Toolbox CLI\)” on page 48](#)

Administering Hosts (Toolbox CLI)

These tasks display and manage hosts.

- [“Display Host Partition Information \(Toolbox CLI\)” on page 51](#)
- [“Display All Hosts in the Fabric \(Toolbox CLI\)” on page 52](#)
- [“Display Hosts Visible From a Node \(Toolbox CLI\)” on page 53](#)
- [“Replace a GUID Manually \(Toolbox CLI\)” on page 54](#)
- [“Replace a GUID Automatically \(Toolbox CLI\)” on page 56](#)

Related Information

- [“Performing Basic Toolbox CLI Tasks” on page 17](#)
- [“Administering the Fabric Configuration \(Toolbox CLI\)” on page 25](#)
- [“Administering Partitions \(Toolbox CLI\)” on page 32](#)
- [“Administering Subnet Managers \(Toolbox CLI\)” on page 42](#)
- [“Administering Switches \(Toolbox CLI\)” on page 45](#)
- [“Administering Logs \(Toolbox CLI\)” on page 58](#)

▼ Display Host Partition Information (Toolbox CLI)

- **In the Toolbox CLI, display host partition information.**

```
[toolbox-cli] show hosts pname=partition_name|pkey=P_Key
```

where:

- *partition_name* is the partition name.
- *P_Key* is the partition key.

Note - If the partition name or P_Key is not provided, the command returns hosts visible from the local switch, and the respective partition names and P_Keys.

For example, to display the hosts in the Default partition, type:

```
[toolbox-cli] show hosts pname=Default
GUID                NODE DESCRIPTION
PKEYS
```

```

-----
-----
0x002128b81684c000    SUN IB QDR GW switch nsn156-81 10.134.156.81 Bridge 0
  Default(7fff)
0x002128ebca1ec040    SUN IB QDR GW switch nsn156-102 10.134.156.102 Bridge 1
  Default(7fff)
0x002128b81684c040    SUN IB QDR GW switch nsn156-81 10.134.156.81 Bridge 1
  Default(7fff)
0x002128ebca1ec000    SUN IB QDR GW switch nsn156-102 10.134.156.102 Bridge 0
  Default(7fff)
0x0010e00001631b00    MT25408 ConnectX Mellanox Technologies
  Default(7fff)
0x0002c9030008e136    nsn156-54 mlx4_0
box1(3342), Default(7fff)
[toolbox-cli]
    
```

nm2-

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“hosts Object Commands” on page 105](#)
- [“Display All Hosts in the Fabric \(Toolbox CLI\)” on page 52](#)
- [“Display Hosts Visible From a Node \(Toolbox CLI\)” on page 53](#)
- [“Replace a GUID Manually \(Toolbox CLI\)” on page 54](#)
- [“Replace a GUID Automatically \(Toolbox CLI\)” on page 56](#)

▼ Display All Hosts in the Fabric (Toolbox CLI)

- In the Toolbox CLI, display all hosts in the fabric.

Note - All partition information is ignored.

```

[toolbox-cli] show hosts fabric
GUID                NODE DESCRIPTION
-----
0x002128b81684c000    SUN IB QDR GW switch nsn156-81 10.134.156.81 Bridge 0
0x0010e00001631b00    MT25408 ConnectX Mellanox Technologies
0x0021280001ef31e2    MT25408 ConnectX Mellanox Technologies
0x002128ebca1ec040    SUN IB QDR GW switch nsn156-102 10.134.156.102 Bridge 1
0x002128b81684c040    SUN IB QDR GW switch nsn156-81 10.134.156.81 Bridge 1
0x0010e00001337f90    MT25408 ConnectX Mellanox Technologies
0x002128ebca1ec000    SUN IB QDR GW switch nsn156-102 10.134.156.102 Bridge 0
0x0002c903000891aa    MT25408 ConnectX Mellanox Technologies
0x0021280001cee66a    MT25408 ConnectX Mellanox Technologies
0x0002c9030008e136    nsn156-54 mlx4_0
    
```

```
0x0002c9030008923e    MT25408 ConnectX Mellanox Technologies
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“hosts Object Commands” on page 105](#)
- [“Display Host Partition Information \(Toolbox CLI\)” on page 51](#)
- [“Display Hosts Visible From a Node \(Toolbox CLI\)” on page 53](#)
- [“Replace a GUID Manually \(Toolbox CLI\)” on page 54](#)
- [“Replace a GUID Automatically \(Toolbox CLI\)” on page 56](#)

▼ Display Hosts Visible From a Node (Toolbox CLI)

Note - This command also displays the P_Keys the node is visible from.

- **In the Toolbox CLI, display the hosts visible from a particular node.**

```
[toolbox-cli] show hosts visible-from nodesdesc='description'|nodeguid=GUID|portguid=GUID
```

where:

- *description* is the entire node description string.
- *GUID* is either the node GUID or the port GUID.

For example, to display the hosts visible from the node with port GUID `0x0002c90300089240`, type:

```
[toolbox-cli] show hosts visible-from portguid=0x0002c90300089240
NODE DESCRIPTION    MT25408 ConnectX Mellanox Technologies
NODE GUID           0x0010e00001631b00
PKEYS               Default(7fff)

GUID                NODE DESCRIPTION
PKEYS
-----
0x002128b81684c000  SUN IB QDR GW switch nsn156-81 10.134.156.81 Bridge 0
Default(7fff)
0x002128ebca1ec000  SUN IB QDR GW switch nsn156-102 10.134.156.102 Bridge 0
Default(7fff)
0x002128b81684c040  SUN IB QDR GW switch nsn156-81 10.134.156.81 Bridge 1
Default(7fff)
```

```
0x0002c9030008e136      nsn156-54 mlx4_0      nm2-
box1(3342), Default(7fff)
0x002128ebca1ec040      SUN IB QDR GW switch nsn156-102 10.134.156.102 Bridge 1
Default(7fff)
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“hosts Object Commands” on page 105](#)
- [“Display Host Partition Information \(Toolbox CLI\)” on page 51](#)
- [“Display All Hosts in the Fabric \(Toolbox CLI\)” on page 52](#)
- [“Replace a GUID Manually \(Toolbox CLI\)” on page 54](#)
- [“Replace a GUID Automatically \(Toolbox CLI\)” on page 56](#)

▼ Replace a GUID Manually (Toolbox CLI)

You can use this procedure when replacing an HCA within a server, or exchanging a server and requiring the same fabric configuration as previously.

1. **Start the Toolbox CLI.**
See [“Start the Toolbox CLI” on page 18](#).
2. **In the Toolbox CLI, identify the GUID of the HCA (or server) to be replaced.**

```
[toolbox-cli] show partition all ports
```

```
NAME : SUN_DCS
PKEY : 0001
FLAGS : ipoib
```

```
GUID          MEMBER
-----
ALL_SWITCHES  full
```

```
NAME : nm2-box1
PKEY : 3342
FLAGS : ipoib, defmember=full
```

```
GUID          MEMBER
-----
0x0002c9030008e137  full
0x00212800013ecea0  both
```

```

NAME : Default
PKEY : 7fff
FLAGS : ipoib

GUID                MEMBER
-----            -
ALL_CAS             full
ALL_SWITCHES       full
0x0010e00001631b01 limited

```

[toolbox-cli]

3. **In the output of the command, find the port GUID of the HCA to be replaced, and record it.**
4. **Record the port GUID of the replacement HCA.**
5. **Replace the HCA.**
Follow the instructions for your HCA.
6. **Replace the GUID in the fabric configuration..**

```
[toolbox-cli] manage partition replace-guid current=old_GUID new=new_GUID
```

where:

- *old_GUID* is the previous HCA port GUID.
- *new_GUID* is the new HCA port GUID.

For example, to replace GUID `0x00212800013ecea0` with `0x1111111111111111`, type:

```

[toolbox-cli] manage partition replace-port-guid current=0x00212800013ecea0
new=0x1111111111111111
[toolbox-cli]

```

7. **Verify that the replacement HCA GUID is configured into the fabric.**

```
[toolbox-cli] show partition all ports
```

```

NAME : SUN_DCS
PKEY : 0001
FLAGS : ipoib

```

```

GUID                MEMBER
-----            -
ALL_SWITCHES       full

```

```
NAME : nm2-box1
PKEY : 3342
FLAGS : ipoib, defmember=full

GUID                MEMBER
-----            -
0x0002c9030008e137  full
0x1111111111111111  both

NAME : Default
PKEY : 7fff
FLAGS : ipoib

GUID                MEMBER
-----            -
ALL_CAS              full
ALL_SWITCHES         full
0x0010e00001631b01  limited
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“partition Object Commands” on page 107](#)
- [“Display Host Partition Information \(Toolbox CLI\)” on page 51](#)
- [“Display All Hosts in the Fabric \(Toolbox CLI\)” on page 52](#)
- [“Display Hosts Visible From a Node \(Toolbox CLI\)” on page 53](#)
- [“Replace a GUID Automatically \(Toolbox CLI\)” on page 56](#)

▼ Replace a GUID Automatically (Toolbox CLI)

1. **In the Toolbox CLI, enable automatic GUID replacement.**

```
[toolbox-cli] set settings GUID_REPLACEMENT=1
Done. Restart daemon for changes to take effect.
[toolbox-cli]
```

2. **(Optional) Enable further functionality.**

- **Write to the port log when a port is disabled or enabled.**

```
[toolbox-cli] set settings PORT_DISABLED_ALERTS=1
Done. Restart daemon for changes to take effect.
```

```
[toolbox-cli]
```

- **Write to the port log when an HCA is replaced.**

```
[toolbox-cli] set settings HCA_REPLACEMENT_ALERTS=1
Done. Restart daemon for changes to take effect.
[toolbox-cli]
```

- **Send an email when the alert happens.**

```
[toolbox-cli] set settings EMAIL_ALERTS=1
Done. Restart daemon for changes to take effect.
[toolbox-cli]
```

3. Restart the toolbox daemon.

See [“Enable or Disable the Toolbox CLI Daemon” on page 23](#).

4. Replace the HCA.

Follow the instructions for your HCA.

Upon powering on the new HCA, entries are written to the log. For example:

```
...
[15/Sep/2015 20:03:41] "INFO Node Description change detected on active HCA: scao04adm02
m1x4_0 -> scao04adm02 S 0.0.0.0,0.0.0.0 HCA-1"
[15/Sep/2015 20:03:41] "INFO Node Description change detected on active HCA: scao04adm02
m1x4_0 -> scao04adm02 S 0.0.0.0,0.0.0.0 HCA-1"
[15/Sep/2015 20:03:41] "INFO Toolbox alert!"
[15/Sep/2015 20:03:43] "INFO Alert:
New GUID in Port Switch

Date:          15/Sep/2015 20:03:41

Switch:        scao04sw-ibb0
Port:          10

First seen:    15/Sep/2015 20:00:12
Discovered:    15/Sep/2015 20:00:12
Last seen:     15/Sep/2015 20:03:40
New caguid:    0x000000001234abcd
New port guid: 0x000000001234abcf
Type:          HCA
Description:   scao04adm02 S 0.0.0.0,0.0.0.0 HCA-1

Old caguid:    0x0002c90300a3ca60
Old port guid: 0x0002c90300a3ca62
```

New GUID in Port Switch

```
Date:          15/Sep/2015 20:03:41

Switch:       scao04sw-iba0
Port:        10

First seen:   15/Sep/2015 20:00:12
Discovered:  15/Sep/2015 20:00:12
Last seen:   15/Sep/2015 20:03:39
New caguid:   0x000000001234abcd
New port guid: 0x000000001234abce
Type:        HCA
Description:  scao04adm02 S 0.0.0.0,0.0.0.0 HCA-1

Old caguid:   0x0002c90300a3ca60
Old port guid: 0x0002c90300a3ca61
```

If configured, an email is sent. For example:

```
Send Mail ['root@localhost.com']: Done"
[15/Sep/2015 20:03:46] "INFO Replacing GUID 0x0002c90300a3ca61 --> 0x000000001234abce"
[15/Sep/2015 20:03:49] "INFO Replacing GUID 0x0002c90300a3ca62 --> 0x000000001234abcf"
...
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“settings Object Commands” on page 108](#)
- [“Display Host Partition Information \(Toolbox CLI\)” on page 51](#)
- [“Display All Hosts in the Fabric \(Toolbox CLI\)” on page 52](#)
- [“Display Hosts Visible From a Node \(Toolbox CLI\)” on page 53](#)
- [“Replace a GUID Manually \(Toolbox CLI\)” on page 54](#)

Administering Logs (Toolbox CLI)

These tasks display and manage logs.

- [“Display the Local Port Log \(Toolbox CLI\)” on page 59](#)
- [“Display the Remote Switch Port Log \(Toolbox CLI\)” on page 59](#)
- [“Display the Switch Event Log \(Toolbox CLI\)” on page 60](#)
- [“Configure Email Alerts \(Toolbox CLI\)” on page 61](#)

Related Information

- [“Performing Basic Toolbox CLI Tasks” on page 17](#)
- [“Administering the Fabric Configuration \(Toolbox CLI\)” on page 25](#)
- [“Administering Partitions \(Toolbox CLI\)” on page 32](#)
- [“Administering Subnet Managers \(Toolbox CLI\)” on page 42](#)
- [“Administering Switches \(Toolbox CLI\)” on page 45](#)
- [“Administering Hosts \(Toolbox CLI\)” on page 51](#)

▼ Display the Local Port Log (Toolbox CLI)

- In the Toolbox CLI, display the local port log.

```
[toolbox-cli] show log ports local=True
DATE          PORT      SWITCH      STATUS      PORT GUID      HCA GUID
TYPE         NODE DESCRIPTION
-----
07/Mar/2009 02:16:30  18      nsn156-81  DISABLED      0x0002c90300089240  0x0002c9030008923e
HCA         MT25408 ConnectX Mellanox Technologies      06/Mar/2009 22:48:32
14/Aug/2015 07:44:50  35      nsn156-102 DISABLED      0x0002c9030008e138  0x0002c9030008e136
HCA         nsn156-54 mlx4_0      14/Aug/2015 07:44:13
14/Aug/2015 07:49:20  35      nsn156-102 ENABLED       0x0002c9030008e138  0x0002c9030008e136
HCA         nsn156-54 mlx4_0
...
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“log Object Command” on page 106](#)
- [“Display the Remote Switch Port Log \(Toolbox CLI\)” on page 59](#)
- [“Display the Switch Event Log \(Toolbox CLI\)” on page 60](#)
- [“Configure Email Alerts \(Toolbox CLI\)” on page 61](#)

▼ Display the Remote Switch Port Log (Toolbox CLI)

- In the Toolbox CLI, display the remote switch log.

```
[toolbox-cli] show log ports local=False ip=IP_address|switch=name
```

where:

- *IP_address* is the IP address of the management controller of the switch.
- *name* is the host name of the switch hosting the Subnet Manager.

For example, to display the switch port log on the server with IP address 10.134.156.81, type:

```
[toolbox-cli] show log ports local=False ip=10.134.156.81
SWITCH      PORT      FIRST SEEN          LAST SEEN          PORT GUID          HCA GUID
           TYPE      NODE DESCRIPTION
-----
nsn156-81   20        06/Mar/2009 21:59:02   09/Mar/2009 05:49:36   0x0010e0801bfca0a0
0x0010e0801bfca0a0   Switch      SUN DCS 36P QDR nsn156-47 10.134.156.47
nsn156-81   23        06/Mar/2009 21:59:02   12/Mar/2009 23:29:14   0x0002c9030008923f
0x0002c9030008923e   HCA        MT25408 ConnectX Mellanox Technologies
nsn156-81   1         06/Mar/2009 21:59:02   12/Mar/2009 23:29:14   0x002128b81684c042
0x002128b81684c040   BridgeX    SUN IB QDR GW switch nsn156-81 10.134.156.81 Bridge 1
nsn156-81   3         06/Mar/2009 21:59:02   12/Mar/2009 23:29:14   0x002128b81684c002
0x002128b81684c000   BridgeX    SUN IB QDR GW switch nsn156-81 10.134.156.81 Bridge 0
...
[toolbox-cli]
```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“log Object Command” on page 106](#)
- [“Display the Local Port Log \(Toolbox CLI\)” on page 59](#)
- [“Display the Switch Event Log \(Toolbox CLI\)” on page 60](#)
- [“Configure Email Alerts \(Toolbox CLI\)” on page 61](#)

▼ Display the Switch Event Log (Toolbox CLI)

- In the Toolbox CLI, display the switch event log.

```
[toolbox-cli] show log sm [event=backup|disable|replace]
```

For example, to display all switch events, type:

```
[toolbox-cli] show log sm
DATE          EVENT          INFORMATION
-----
13/Aug/2015 03:56:40   BACKUP        [passphrase: pass152]- nsn156-81(10.134.156.81)
```

```

13/Aug/2015 03:57:13  DISABLE  nsn156-81(10.134.156.81)
13/Aug/2015 04:15:19  REPLACE Restored from 10.134.156.81 to nsn156-81
(10.134.156.81)
20/Aug/2015 05:03:41  BACKUP   [passphrase: pass152]- nsn156-102(10.134.156.102)
20/Aug/2015 05:10:14  DISABLE  nsn156-81(10.134.156.81)
20/Aug/2015 06:05:38  REPLACE  Restored from 10.134.156.81 to nsn156-81
(10.134.156.81)
[toolbox-cli]

```

Related Information

- [“Start the Toolbox CLI” on page 18](#)
- [“log Object Command” on page 106](#)
- [“Display the Local Port Log \(Toolbox CLI\)” on page 59](#)
- [“Display the Remote Switch Port Log \(Toolbox CLI\)” on page 59](#)
- [“Configure Email Alerts \(Toolbox CLI\)” on page 61](#)

▼ Configure Email Alerts (Toolbox CLI)

1. In the Toolbox CLI, enable email alerts.

```

[toolbox-cli] set settings EMAIL_ALERTS=1
Done. Restart daemon for changes to take effect.
[toolbox-cli] set settings SEND_MAIL=1
Done. Restart daemon for changes to take effect.
[toolbox-cli]

```

2. Configure the email settings.

```

[toolbox-cli] set settings MAIL_SERVER="mailrelayserver.domain.com"
Done. Restart daemon for changes to take effect.
[toolbox-cli] set settings MAIL_SENDER="toolbox@mailrelayserver.domain.com"
Done. Restart daemon for changes to take effect.
[toolbox-cli] set settings MAIL_SEND_TO="user@domain.com,root@localhost.com"
Done. Restart daemon for changes to take effect.
[toolbox-cli]

```

where:

- *mailrelayserver.domain.com* is the sendmail SMTP relay server IP address or fully qualified host name.
- *user@domain.com* is the email address to receive the email alert.

For more information about the MAIL_SERVER, MAIL_SENDER, and MAIL_SEND_TO properties, see [“Toolbox CLI Settings Properties” on page 21](#).

3. Restart the toolbox daemon.

See [“Enable or Disable the Toolbox CLI Daemon”](#) on page 23.

Related Information

- [“Start the Toolbox CLI”](#) on page 18
- [“settings Object Commands”](#) on page 108
- [“Display the Local Port Log \(Toolbox CLI\)”](#) on page 59
- [“Display the Remote Switch Port Log \(Toolbox CLI\)”](#) on page 59
- [“Display the Switch Event Log \(Toolbox CLI\)”](#) on page 60

Supplementing the Oracle ILOM Document

These topics provide information supplementing or superseding that found in the *Oracle Integrated Lights Out Manager (ILOM) 3.0 Supplement for the Sun Network QDR InfiniBand Gateway Switch Firmware Version 2.1*.

- [“Understanding Oracle ILOM Targets” on page 63](#)
- [“Switch From the Oracle ILOM Shell to the Linux Shell” on page 71](#)
- [“Understanding the Oracle ILOM Web Interface” on page 72](#)

Related Information

- [“Supplementing the Installation Guide” on page 11](#)
- [“Supplementing the Administration Guide” on page 13](#)
- [“Supplementing the Service Manual” on page 77](#)
- [“Supplementing the Command Reference” on page 79](#)

Understanding Oracle ILOM Targets

These topics describe Oracle ILOM targets and properties new for firmware version 2.2.

- [“Oracle ILOM Targets and Descriptions” on page 64](#)
- [“Oracle ILOM General Targets and Properties” on page 65](#)
- [“Oracle ILOM Client Targets and Properties” on page 66](#)
- [“Oracle ILOM Service Targets and Properties” on page 68](#)
- [“Oracle ILOM User and Session Targets and Properties” on page 69](#)
- [“Oracle ILOM Legacy Targets and Properties” on page 70](#)

Related Information

- [“Switch From the Oracle ILOM Shell to the Linux Shell” on page 71](#)

- [“Understanding the Oracle ILOM Web Interface” on page 72](#)

Oracle ILOM Targets and Descriptions

This table lists Oracle ILOM targets new for firmware 2.2 and provides a short description of the target.

| Target | Description |
|---|--------------------------------------|
| /SP/clients/ldap | Manage LDAP authentication. |
| /SP/clients/ldapssl | Manage LDAP over SSL authentication. |
| /SP/clients/ldapssl/admingroups | Manage administrator groups. |
| /SP/clients/ldapssl/alternateservers | Manage alternate servers. |
| /SP/clients/ldapssl/cert | Manage certificates. |
| /SP/clients/ldapssl/customgroups | Manage custom groups. |
| /SP/clients/ldapssl/opergroups | Manage operator groups. |
| /SP/clients/ldapssl/optionalUserMapping | Manage alternate user mapping. |
| /SP/clients/ldapssl/userdomains | Manage user domains. |
| /SP/logs/audit | Manage the audit log. |
| /SP/logs/audit/list | View audit log entries. |
| /SP/network/ipv6 | Manage IPv6 network configuration. |
| /SP/policy | Manage system policies. |
| /SP/preferences | Manage SP preferences. |
| /SP/preferences/banner | Manage SP login messages. |
| /SP/preferences/banner/connect | Manage SP connect message. |
| /SP/preferences/banner/login | Manage SP login message. |
| /SP/preferences/password_policy | Manage SP password policy. |
| /SP/services/ssh | Manage the Secure Shell service. |
| /SP/services/ssh/keys | Manage Secure Shell authentication. |
| /SP/services/ssh/keys/dsa | Manage the SSH DSA key. |
| /SP/services/ssh/keys/rsa | Manage the SSH RSA key. |
| /SYS/LINKDISABLE_ATTN | Aggregate autodisable sensor. |

Related Information

- [“Oracle ILOM General Targets and Properties” on page 65](#)
- [“Oracle ILOM Client Targets and Properties” on page 66](#)

- [“Oracle ILOM Service Targets and Properties” on page 68](#)
- [“Oracle ILOM User and Session Targets and Properties” on page 69](#)
- [“Oracle ILOM Legacy Targets and Properties” on page 70](#)

Oracle ILOM General Targets and Properties

This table lists new general Oracle ILOM /SP targets and their properties, and new properties for firmware 2.2.

Note - Targets without properties are not listed.

| Target and Path | Properties and Default Values |
|--------------------------|---|
| /SP | current_hostname = o4nm2-gw-8 |
| /SP/clock | uptime = 16 days, 09:29:10 |
| /SP/faultmgmt/x | fru = /SYS/MB |
| /SP/faultmgmt/x/faults/y | <ul style="list-style-type: none"> ■ class = fault.chassis.io.disk.predictive-failure ■ sunw-msg-id = DCSIB-8000-3Y ■ component = /SYS/MB ■ uuid = c8ecee24-8720-e44c-c7bf-c87be1d4d934 ■ timestamp = 2015-11-18/00:38:59 ■ fru_part_number = 7014379 ■ fru_serial_number = 465769T+1226R601F3 ■ fru_name = Chassis and Motherboard ■ system_component_manufacturer = Sun Microsystems ■ system_component_name = Sun Network QDR InfiniBand Gateway Switch ■ system_component_part_number = 7014378 ■ system_component_serial_number = AK00059818 ■ chassis_manufacturer = Sun Microsystems ■ chassis_name = Sun Network QDR InfiniBand Gateway Switch ■ chassis_part_number = 7014378 ■ chassis_serial_number = AK00059818 |
| /SP/logs/audit | clear = (Cannot show property) |
| /SP/network | dhcp_clientid = none |
| /SP/network/ipv6 | <ul style="list-style-type: none"> ■ state = enabled ■ autoconfig = stateless ■ dhcpv6_server_duid = (none) ■ link_local_ipaddress = fe80::2e0:4bff:fe3d:8170/64 ■ static_ipaddress = ::/128 |

| Target and Path | Properties and Default Values |
|---------------------------------|---|
| | <ul style="list-style-type: none"> ■ ipgateway = fe80::72ca:9bff:fe67:b981/128 ■ pending_static_ipaddress = ::/128 ■ dynamic_ipaddress_1 = 2606:b400:85c:2054:2e0:4bff:fe3d:8170/64 |
| /SP/network/test | ping6 = (Cannot show property) |
| /SP/preferences/banner/connect | <ul style="list-style-type: none"> ■ dump_uri = (Cannot show property) ■ load_uri = (Cannot show property) ■ message = (none) |
| /SP/preferences/banner/login | <ul style="list-style-type: none"> ■ dump_uri = (Cannot show property) ■ load_uri = (Cannot show property) ■ message = (none) ■ message_acceptance = disabled |
| /SP/preferences/password_policy | <ul style="list-style-type: none"> ■ policy = 8 ■ min_length = 8 ■ uppercase = no restrictions ■ lowercase = no restrictions ■ numbers = no restrictions ■ symbols = no restrictions ■ history = no restrictions |

Related Information

- [“Oracle ILOM Targets and Descriptions” on page 64](#)
- [“Oracle ILOM Client Targets and Properties” on page 66](#)
- [“Oracle ILOM Service Targets and Properties” on page 68](#)
- [“Oracle ILOM User and Session Targets and Properties” on page 69](#)
- [“Oracle ILOM Legacy Targets and Properties” on page 70](#)

Oracle ILOM Client Targets and Properties

This table lists new Oracle ILOM /SP/clients targets and their properties, and new properties for firmware 2.2.

| Target and Path | Properties and Default Values |
|------------------|---|
| /SP/clients/ldap | <ul style="list-style-type: none"> ■ address = 0.0.0.0 ■ binddn = (none) ■ bindpw = (none) ■ defaultrole = Operator |

| Target and Path | Properties and Default Values |
|---|--|
| | <ul style="list-style-type: none"> ■ port = 389 ■ searchbase = (none) ■ state = disabled |
| /SP/clients/ldapssl | <ul style="list-style-type: none"> ■ address = 0.0.0.0 ■ defaultrole = (none) ■ logdetail = none ■ port = 0 ■ state = disabled ■ strictcertmode = disabled ■ timeout = 4 |
| /SP/clients/ldapssl/admingroups/x | name = (none) |
| /SP/clients/ldapssl/alternateservers/x | <ul style="list-style-type: none"> ■ address = (none) ■ port = 0 |
| /SP/clients/ldapssl/alternateservers/x/cert | <ul style="list-style-type: none"> ■ certstatus = certificate not present ■ clear_action = (Cannot show property) ■ issuer = (none) ■ load_uri = (Cannot show property) ■ serial_number = (none) ■ subject = (none) ■ valid_from = (none) ■ valid_until = (none) ■ version = (none) |
| /SP/clients/ldapssl/cert | <ul style="list-style-type: none"> ■ certstatus = certificate not present ■ clear_action = (Cannot show property) ■ issuer = (none) ■ load_uri = (Cannot show property) ■ serial_number = (none) ■ subject = (none) ■ valid_from = (none) ■ valid_until = (none) ■ version = (none) |
| /SP/clients/ldapssl/customgroups/x | <ul style="list-style-type: none"> ■ name = (none) ■ roles = (none) |
| /SP/clients/ldapssl/opergroups/x | name = (none) |
| /SP/clients/ldapssl/optionalUserMapping | <ul style="list-style-type: none"> ■ attributeInfo = (none) ■ binddn = (none) ■ bindpw = (none) ■ searchbase = (none) ■ state = disabled |
| /SP/clients/ldapssl/userdomains/x | domain = (none) |

Related Information

- [“Oracle ILOM Targets and Descriptions” on page 64](#)
- [“Oracle ILOM General Targets and Properties” on page 65](#)
- [“Oracle ILOM Service Targets and Properties” on page 68](#)
- [“Oracle ILOM User and Session Targets and Properties” on page 69](#)
- [“Oracle ILOM Legacy Targets and Properties” on page 70](#)

Oracle ILOM Service Targets and Properties

This table lists new Oracle ILOM /SP/services targets and their properties, and new properties for firmware 2.2.

| Target and Path | Properties and Default Values |
|---------------------------|--|
| /SP/services/http | sessiontimeout = 15 |
| /SP/services/https | <ul style="list-style-type: none"> ■ sessiontimeout = 15 ■ tlsv1 = enabled ■ tlsv1_1 = enabled ■ tlsv1_2 = enabled |
| /SP/services/ipmi | v1_5_sessions = disabled |
| /SP/services/servicetag | servicetag_urn = Undefined |
| /SP/services/ssh | <ul style="list-style-type: none"> ■ generate_new_key_action = (Cannot show property) ■ generate_new_key_type = none ■ restart_sshd_action = (Cannot show property) ■ state = enabled ■ weak_ciphers = disabled |
| /SP/services/ssh/keys/dsa | <ul style="list-style-type: none"> ■ fingerprint = 40:df:2b:04:15:26:e6:9b:fa:e6:b1:a3:e5:93:0f:13 ■ length = 1024 ■ privatekey = (Cannot show property) ■ publickey = AAAAB3NzaC1kc3MAAACBAPA7583j0LhhN2tPl1jfoCf24yWpd+MySZSMoojXurylgxlrL6pCVvFHmiBPX2DjCyxucotuqM9gcGR0A44a0LJ3Zd0+4ZFCL0VMtMrzJAWjFWLPsIGHxLL6lyuLTYYLx52UBIQL7p08GaXPKJ01zIiPtTC9+iNMBfH4kQxhTeZvAAAAFQDfWe5Pjda+HibHjZRV5+QnJ0vR/YkA33oa+6GT1H8Gbo4UXldnYgIH3EyVWEG/OmfuIGPMmTv16rOAOCqERNXsZc9ALMjlfw+G9r+X3JTLpYZtBcQAAAAIBk/KVZRSorsfkHTnueND4wWeTIq/+8WJQ2mzDFS7L5ZtsS6EN8tGThPOyNtuQjstCjCkcNhi+aa3ZGZzuA4aCd0PjGiejSY5pE4hzdNuPYTNoS6gaaqpXKDPih9A1jo40hLHbuG76dKZmRdbv0GXkPjL9va2bB4MStByRg9 |
| /SP/services/ssh/keys/rsa | <ul style="list-style-type: none"> ■ fingerprint = 45:f2:79:9b:c4:a8:fe:c7:08:85:a6:fb:cd:09:90:82 ■ length = 1024 ■ privatekey = (Cannot show property) |

| Target and Path | Properties and Default Values |
|-----------------|--|
| | <ul style="list-style-type: none"> ■ <code>publickey =</code> AAAAB3NzaC1yc2EAAAABIwAAAEAxTVZSM4LI2weH2TZmP1+zB1ohaxcIgdQFtpOsd4NuIx02bqoKNHwVbTOnK274yMo555Ght +SN6W9bvT+sJg1VadbhPx/jTnsBoHRCnghMw8H8LRWCZ6IVf8Qqvc4I1fEhw1Mc// pFJ9yxkM1cbbfqv0Y/5gmeBREcUhd6XHPWciYr +XvfkMIBgv0TfzkhYFNtZBYmKMoh1oY604cgJvLLySUfh1DcltJJac0X3278+PFpftxLtCwYmWf0C7Ceh9rLpkE/ FQsKpzivzU5C+e3UdcWa5ajsuC4j7kRzoKzgf1yWAnQT3ZtyYf+nwHzFXQ== |

Related Information

- [“Oracle ILOM Targets and Descriptions” on page 64](#)
- [“Oracle ILOM General Targets and Properties” on page 65](#)
- [“Oracle ILOM Client Targets and Properties” on page 66](#)
- [“Oracle ILOM User and Session Targets and Properties” on page 69](#)
- [“Oracle ILOM Legacy Targets and Properties” on page 70](#)

Oracle ILOM User and Session Targets and Properties

This table lists new Oracle ILOM /SP/users targets and their properties, and new properties for firmware 2.2.

| Target and Path | Properties and Default Values |
|---------------------------|--|
| /SP/users/root/ssh/keys/x | <ul style="list-style-type: none"> ■ <code>fingerprint = (none)</code> ■ <code>algorithm = (none)</code> ■ <code>embedded_comment = (none)</code> ■ <code>bit_length = (none)</code> ■ <code>load_uri = (Cannot show property)</code> ■ <code>clear_action = (Cannot show property)</code> |

Related Information

- [“Oracle ILOM Targets and Descriptions” on page 64](#)
- [“Oracle ILOM General Targets and Properties” on page 65](#)
- [“Oracle ILOM Client Targets and Properties” on page 66](#)
- [“Oracle ILOM Service Targets and Properties” on page 68](#)

- [“Oracle ILOM Legacy Targets and Properties” on page 70](#)

Oracle ILOM Legacy Targets and Properties

This table lists new Oracle ILOM /SYS targets and their properties, and new properties for firmware 2.2.

| Target and Path | Properties and Default Values |
|-----------------------|--|
| /SYS | <ul style="list-style-type: none"> ■ <code>fault_state</code> = OK ■ <code>clear_fault_action</code> = (none) |
| /SYS/LINKDISABLE_ATTN | <ul style="list-style-type: none"> ■ <code>type</code> = OEM ■ <code>ipmi_name</code> = LINKDISABLE_ATTN ■ <code>class</code> = Discrete Sensor ■ <code>value</code> = State Deasserted ■ <code>alarm_status</code> = cleared |
| /SYS/MB | <code>fru_serial_number</code> = 465769T+1234R601F3 |
| /SYS/MB/T_B0 | <ul style="list-style-type: none"> ■ <code>upper_nonrecov_threshold</code> = 95.000 degree C ■ <code>upper_critical_threshold</code> = 90.000 degree C |
| /SYS/MB/T_B1 | <ul style="list-style-type: none"> ■ <code>upper_nonrecov_threshold</code> = 95.000 degree C ■ <code>upper_critical_threshold</code> = 90.000 degree C |
| /SYS/MB/T_BACK | <ul style="list-style-type: none"> ■ <code>upper_nonrecov_threshold</code> = 65.000 degree C ■ <code>upper_critical_threshold</code> = 60.000 degree C |
| /SYS/MB/T_FRONT | <ul style="list-style-type: none"> ■ <code>upper_nonrecov_threshold</code> = 65.000 degree C ■ <code>upper_critical_threshold</code> = 60.000 degree C |
| /SYS/MB/T_I4A | <ul style="list-style-type: none"> ■ <code>upper_nonrecov_threshold</code> = 95.000 degree C ■ <code>upper_critical_threshold</code> = 90.000 degree C |
| /SYS/MB/T_SP | <ul style="list-style-type: none"> ■ <code>upper_nonrecov_threshold</code> = 85.000 degree C ■ <code>upper_critical_threshold</code> = 80.000 degree C |

Related Information

- [“Oracle ILOM Targets and Descriptions” on page 64](#)
- [“Oracle ILOM General Targets and Properties” on page 65](#)
- [“Oracle ILOM Client Targets and Properties” on page 66](#)
- [“Oracle ILOM Service Targets and Properties” on page 68](#)
- [“Oracle ILOM User and Session Targets and Properties” on page 69](#)

▼ Switch From the Oracle ILOM Shell to the Linux Shell

1. Access the Oracle ILOM CLI.

See Accessing Oracle ILOM From the CLI.

2. Switch to the Linux shell.

```
-> start /SYS/Switch_Diag  
Are you sure you want to start /SYS/Switch_Diag (y/n)? y
```

NOTE: start /SYS/Switch_Diag will launch a restricted Linux shell.
User can execute switch diagnosis and IB monitoring commands
in the shell. To view the list of commands, use "help" at
rsh prompt.

Use exit command at rsh prompt to revert back to
ILOM shell.

```
Diag@gateway_name->
```

Or.

```
-> start /SYS/Gateway_Mgmt  
Are you sure you want to start /SYS/Gateway_Mgmt (y/n)? y
```

NOTE: start /SYS/Gateway_Mgmt will launch a restricted Linux shell.
User can execute switch diagnosis, Ethernet Gateway resource
administration and configuration commands and IB monitoring
commands in the shell. To view the list of commands, use "help"
at rsh prompt.

Use exit command at rsh prompt to revert back to
ILOM shell.

```
GWMan@gateway_name->
```

Or.

```
-> start /SYS/Fabric_Mgmt  
Are you sure you want to start /SYS/Fabric_Mgmt (y/n)? y
```

NOTE: start /SYS/Fabric_Mgmt will launch a restricted Linux shell.
User can execute switch diagnosis, SM Configuration and IB
monitoring commands in the shell. To view the list of commands,
use "help" at rsh prompt.

Use exit command at rsh prompt to revert back to

```
ILOM shell.  
  
FabMan@gateway_name->  
  
where gateway_name is the host name of the management controller.  
  
You are now in the Linux shell.  
  
You can use the exit command to return to the Oracle ILOM shell.  
  
If you try to switch to the /SYS/Gateway_Mgmt or /SYS/Fabric_Mgmt Linux shell as the ilom-  
operator user, this message is displayed.  
  
-> start /SYS/Gateway_Mgmt  
Are you sure you want to start /SYS/Gateway_Mgmt (y/n)? y  
start: User role does not allow this action to be performed  
->
```

Related Information

- [show Command](#)
- [exit Command \(Oracle ILOM\)](#)
- [/SYS/Switch_Diag, /SYS/Gateway_Mgmt, and /SYS/Fabric_Mgmt Linux Shells](#)
- [Switch From the Linux Shell to the Oracle ILOM Shell](#)

Understanding the Oracle ILOM Web Interface

These topics describe the new Oracle ILOM Web interface.

- [“Oracle ILOM Web Interface Overview” on page 73](#)
- [“Oracle ILOM Web Interface Translation” on page 74](#)

Related Information

- [“Understanding Oracle ILOM Targets” on page 63](#)
- [“Switch From the Oracle ILOM Shell to the Linux Shell” on page 71](#)

Oracle ILOM Web Interface Overview

For the 2.2 firmware, the Oracle ILOM web interface has been changed to the standard look and feel of Oracle ILOM 3.2. In this new interface, functionality has been reorganized, as described in this table.

| Navigation Pane Heading | Subheading | Description |
|--------------------------------|--------------------------|--|
| System Information | Summary | Displays gateway and SP firmware version information. |
| | Components | Displays component information and clear fault status. |
| | Sensors | Displays sensor values. |
| | Indicators | Displays and sets gateway status LED state. |
| Switch/Fabric Monitoring Tools | SUN DCS GW Monitor | Enters the Fabric Monitor interactive GUI. |
| Oracle ILOM Administration | Identification | Displays and sets gateway identification information. |
| | Logs | Tabs for: <ul style="list-style-type: none"> ■ Event – Displays and clears event log. ■ Audit – Displays and clears audit log. |
| | Management Access | Tabs for: <ul style="list-style-type: none"> ■ Web Server – Displays and sets web server behavior and ports. ■ SSL Certificate – Displays and sets certificate information. ■ SNMP – Displays and sets SNMP users, communities, and access. ■ SSH Server – Displays and sets RSA and DSA keys. ■ IPMI – Displays and sets the IPMI service. ■ CLI – Displays and sets inactivity timeout for autologout. ■ Banner Messages – Displays and sets messages displayed at connection and login. ■ FIPS – Displays and sets the state of FIPS. |
| | User Management | Tabs for: <ul style="list-style-type: none"> ■ Active Sessions – Displays and terminates active sessions. ■ User Accounts – Displays and sets user accounts and keys. ■ Password Policy – Displays and sets the password constraints. ■ LDAP – Displays and sets the LDAP users. ■ LDAP/SSL – Displays and sets LDAP over SSL users and configuration. |
| | Connectivity | Tabs for: <ul style="list-style-type: none"> ■ Network – Displays and sets IPv4 and IPv6 network parameters. Has ping test. ■ DNS – Displays and set DNS client parameters. ■ Serial Port – Displays and sets the external serial port. |
| | Configuration Management | Enables system configuration back up and restore. |

| Navigation Pane Heading | Subheading | Description |
|-------------------------|------------------|--|
| | Fault Management | Displays information about faulted components. |
| | Notifications | Tabs for: <ul style="list-style-type: none"> ■ Alerts – Displays and set alerts for events. ■ Syslog – Displays and sets Syslog redirection to IP address. ■ SMTP Client – Displays and sets SMTP client for email alerts. Has email test. |
| | Date and Time | Tabs for: <ul style="list-style-type: none"> ■ Clock – Displays and sets date, time, and time server parameters. ■ Timezone – Displays and sets time zone. |
| | Maintenance | Tabs for: <ul style="list-style-type: none"> ■ Firmware Update – Enables firmware upgrade. ■ Reset SP – Resets the management controller. ■ Snapshot – Enables a snapshot of the gateway state. |
| Site Map | | Links to all Oracle ILOM web pages on one page. |

Related Information

- [“Oracle ILOM Web Interface Translation” on page 74](#)

Oracle ILOM Web Interface Translation

The *Sun Network QDR InfiniBand Gateway Switch Administration Guide for Firmware 2.1* describes navigating through the Oracle ILOM 3.0 web interface to accomplish tasks. For firmware version 2.2.x, the Oracle ILOM is version 3.2.y, and the web interface has a different navigation. Yet the actual pages where the administration is done has remained relatively the same.

This table lists the goal you want to achieve, and the actions in the Oracle ILOM 3.2.y web interface to navigate to that particular page.

| Goal to Achieve | Menu Selections |
|----------------------------|---|
| Administer alerts | ILOM Administration → Notifications → Alerts |
| Administer audit log | ILOM Administration → Logs → Audit |
| Administer banner messages | ILOM Administration → Management Access → Banner Messages |
| Administer CLI timeout | ILOM Administration → Management Access → CLI |
| Administer date and time | ILOM Administration → Date and Time → Clock |

| Goal to Achieve | Menu Selections |
|---|---|
| Administer event log | ILOM Administration → Logs → Event |
| Administer FIPS | ILOM Administration → Management Access → FIPS |
| Administer IPMI service | ILOM Administration → Management Access → IPMI |
| Administer LDAP authentication | ILOM Administration → User Management → LDAP |
| Administer LDAP over SSL authentication | ILOM Administration → User Management → LDAP/SSL |
| Administer name services | ILOM Administration → Connectivity → DNS |
| Administer password format | ILOM Administration → User Management → Password Policy |
| Administer SER MGT port | ILOM Administration → Connectivity → Serial Port |
| Administer SMTP client | ILOM Administration → Notifications → SMTP Client |
| Administer SNMP services | ILOM Administration → Management Access → SNMP |
| Administer SP identity | ILOM Administration → Identification |
| Administer SP network properties | ILOM Administration → Connectivity → Network |
| Administer SSH keys | ILOM Administration → Management Access → SSH Server |
| Administer SSL certificates | ILOM Administration → Management Access → SSL Certificate |
| Administer system snapshot | ILOM Administration → Maintenance → Snapshot |
| Administer time zone | ILOM Administration → Date and Time → Timezone |
| Administer user accounts | ILOM Administration → User Management → User Accounts |
| Administer user sessions | ILOM Administration → User Management → Active Sessions |
| Administer web server | ILOM Administration → Management Access → Web Server |
| Backup or restore configuration | ILOM Administration → Configuration Management |
| Display sensor status | System Information → Sensors |
| Display sensor information | System Information → Sensors → Oracle ILOM target |
| Display chassis LED status | System Information → Indicators |
| Display component FRU ID | System Information → Components → Oracle ILOM target |
| Display component status | System Information → Components |
| Display faulted components | ILOM Administration → Fault Management |
| Display faulted component FRU ID | ILOM Administration → Fault Management → Oracle ILOM target |
| Display firmware information | System Information → Summary |
| Reset SP | ILOM Administration → Maintenance → Reset SP |
| Set remote syslog servers | ILOM Administration → Notifications → Syslog |
| Start Fabric Monitor | Switch/Fabric Monitoring Tools → SUN DCS GW Monitor → Launch SUN DCS GW Monitor |
| Upgrade firmware | ILOM Administration → Maintenance → Firmware Update → Enter Upgrade Mode |

Related Information

- [“Oracle ILOM Web Interface Overview” on page 73](#)

Supplementing the Service Manual

These topics provide information supplementing or superseding that found in the *Sun Network QDR InfiniBand Gateway Switch Service Manual for Firmware Version 2.1*.

- [“Battery Service Sequence” on page 77](#)

Related Information

- [“Supplementing the Installation Guide” on page 11](#)
- [“Supplementing the Administration Guide” on page 13](#)
- [“Supplementing the Oracle ILOM Document” on page 63](#)
- [“Supplementing the Command Reference” on page 79](#)

Battery Service Sequence

Note - You must completely power off the gateway before disconnecting the data cables. Similarly, you must attach all data cables before powering on the gateway.

| Step | Description | Links |
|------|-------------------------------------|--|
| 1. | Determine if the battery is faulty. | “Determine If the Battery is Faulty” on page 79 |
| 2. | Power off both power supplies. | “Power Off a Power Supply” on page 48 Note - Do not remove the data cables until the gateway is powered off. |
| 3. | Remove all data cables. | “Remove a Data Cable” on page 70 |
| 4. | Remove the gateway from the rack. | “Remove the Gateway From the Rack” on page 81 |
| 5. | Replace the battery. | “Replace the Battery” on page 82 |
| 6. | Install the gateway in the rack. | <i>Gateway Installation</i> , installing the gateway Note - Do not power on the gateway. |
| 7. | Install all data cables. | “Install a Data Cable” on page 75 |

Battery Service Sequence

| Step | Description | Links |
|-------------|-----------------------------------|---|
| 8. | Power on both power supplies. | “Power On a Power Supply” on page 53 |
| 9. | (Optional) Set the time and date. | <i>Gateway Administration</i> , setting the date and time |

Supplementing the Command Reference

These topics provide information supplementing or superseding that found in the *Sun Network QDR InfiniBand Gateway Switch Command Reference for Firmware Version 2.1*.

- [“Understanding Hardware Commands” on page 79](#)
- [“Understanding Toolbox CLI Commands” on page 102](#)

Related Information

- [“Supplementing the Installation Guide” on page 11](#)
- [“Supplementing the Administration Guide” on page 13](#)
- [“Supplementing the Oracle ILOM Document” on page 63](#)
- [“Supplementing the Service Manual” on page 77](#)

Understanding Hardware Commands

This command reference information supplements or supersedes information currently provided in the *Sun Network QDR InfiniBand Gateway Switch Command Reference for Firmware Version 2.1* and *Sun Network QDR InfiniBand Gateway Switch Administration Guide for Firmware Version 2.1*.

- [“createlag Command” on page 80](#)
- [“env_test Command” on page 82](#)
- [“fwverify Command” on page 84](#)
- [“showvlan Command” on page 87](#)
- [“showvnics Command” on page 88](#)
- [“smpartition Command” on page 90](#)
- [“smsubnetprotection Command” on page 95](#)
- [“toolbox Command” on page 100](#)

Related Information

- [“Understanding Toolbox CLI Commands” on page 102](#)

createlag Command

Creates a LAG.

Syntax

```
createlag lagname [-discoverpkey P_Key][--data=sl sl][--lacpmode active|passive|static][--distribution MAC-ONLY|IP-ONLY|TCP-IP|Default][--n][connector1 [connector2 [...connectorN]]][--vniclimit 1|4][--h]
```

where:

- *lagname* is the identifier of the LAG.
- *P_Key* is the discovery partition key (1 to 7fff or default).
- *sl* is the data service level.

Note - Use service level 1 (sl 1) only for low-latency, high-priority, small-message, low-bandwidth traffic. Use other service levels for regular, high-bandwidth traffic.

- *connector1* is the name of the first connector to be added to the LAG (0A-ETH-1 to 0A-ETH-4 and 1A-ETH-1 to 1A-ETH-4).
- *connectorN* is the name of the last connector to be added to the LAG (0A-ETH-1 to 0A-ETH-4 and 1A-ETH-1 to 1A-ETH-4).

Description

This hardware command creates a LAG for maximizing Ethernet bandwidth. You specify which connectors are to belong to the LAG. The gateway supports a maximum of 16 LAGs.

Note - If a VNIC has been assigned to a connector, that connector cannot be added to a LAG until the respective VNIC has been deleted.

The `createlag` command supports the Link Aggregate Control Protocol (LACP) and permits network devices to auto-negotiate link bundling by sending LACP packets to peers which also implement LACP.

The LAG and associated VNICs are discovered by host drivers in the default or other partition that has been configured with the default discovery P_Key. By defining a LAG-specific discovery P_Key, the visibility is restricted to hosts configured with the same discovery P_Key. The gateway must be a full member of the discovery partition, and the hosts must be at least limited members. The discovery P_Key does not need to be the same as the partition used for data traffic, and different VLANs can still be associated with different partitions for data traffic.

You can create a Global Gateway by not specifying any connectors for the LAG.

Note - You can create a maximum of 16 Global Gateways per gateway.

The `createlag` command is available from the `/SYS/Gateway_Mgmt` and `/SYS/Fabric_Mgmt` Linux shell targets of the Oracle ILOM CLI interface.

Options

This table describes the options to the `createlag` command and their purposes.

| Option | Purpose |
|-----------------------------|---|
| <code>-discoverypkey</code> | Specifies a discovery P_Key, other than default, used by the BridgeX manager. Discovery P_Keys limit the visibility of the LAGs. |
| <code>-datasl</code> | Specifies the data service level for a Global Gateway when no connectors are specified. Note - Use service level 1 (<code>sl 1</code>) only for low-latency, high-priority, small-message, low-bandwidth traffic. Use other service levels for regular, high-bandwidth traffic. |
| <code>-distribution</code> | Specifies how the packet flows are distributed over the connectors in the LAG: <ul style="list-style-type: none"> ■ <code>MAC-ONLY</code> – Packet flow distribution is based on the MAC. ■ <code>IP-ONLY</code> – Packet flow distribution is based on IP. ■ <code>TCP-IP</code> – Packet flow distribution is based on TCP-IP. ■ <code>Default</code> – Default packet flow distribution. Note - For firmware version 2.1, distribution options <code>MAC-ONLY</code> , <code>IP-ONLY</code> , and <code>TCP-IP</code> map to the <code>Default</code> option. |
| <code>-lacpmode</code> | Specifies the LACP mode of operation: <ul style="list-style-type: none"> ■ <code>active</code> – The ports always send out frames to the peers. ■ <code>passive</code> – The ports send out frames only in response to received frames from peers. ■ <code>static</code> – LACP is not used. LAGs are statically configured. This is the default. |

| Option | Purpose |
|------------|---|
| -n | Specifies the LAG to be non-persistent. The LAG does not survive a reboot. |
| -vniclimit | Specifies the maximum number of VNICs to external port associations per LAG (1 = 1000 VNICs, 4 = 4000 VNICs). If the limit is set at 4, then all four ports of the connector group are part of the LAG. The connector group (0A-ETH or 1A-ETH) is specified in the <code>createLag</code> command, and not the individual connectors. |
| -h | Provides help. |

Example

This example shows how to create a LAG with name `test` using the `createLag` command.

```
FabMan@gateway_name->createLag test 0A-ETH-1 0A-ETH-2
Lag created
FabMan@gateway_name->
```

Related Information

- `deleteLag` Command
- `enableLagmode` Command
- Linux Shells for Hardware Commands

env_test Command

Displays environmental status.

Syntax

```
env_test
```

Description

This hardware command performs a series of hardware and environmental tests of the gateway. This command is an amalgamation of these commands:

- `checkpower`

- `checkvoltages`
- `showtemps`
- `getfanspeed`
- `connector`
- `checkboot`

The command output provides voltage and temperature values, pass-fail results, and error messages.

The `env_test` command is available from the `/SYS/Switch_Diag`, `/SYS/Gateway_Mgmt`, and `/SYS/Fabric_Mgmt` Linux shell targets of the Oracle ILOM CLI interface.

Example

This example shows how to display the hardware and environmental status of the gateway with the `env_test` command.

```
FabMan@gateway_name->env_test
Environment test started:
Starting Environment Daemon test:
Environment daemon running
Environment Daemon test returned OK
Starting Voltage test:
Voltage ECB OK
Measured 3.3V Main = 3.27 V
Measured 3.3V Standby = 3.35 V
Measured 12V = 11.97 V
Measured 5V = 5.02 V
Measured VBAT = 3.06 V
Measured 1.0V = 1.02 V
Measured I4 1.2V = 1.22 V
Measured 2.5V = 2.52 V
Measured V1P2 DIG = 1.18 V
Measured V1P2 ANG = 1.17 V
Measured 1.2V BridgeX = 1.22 V
Measured 1.8V = 1.79 V
Measured 1.2V Standby = 1.19 V
Voltage test returned OK
Starting PSU test:
PSU 0 present OK
PSU 1 present OK
PSU test returned OK
Starting Temperature test:
Back temperature 24
```

```
Front temperature 25
SP temperature 48
Switch temperature 43, maxtemperature 46
Bridge-0 temperature 42, maxtemperature 45
Bridge-1 temperature 43, maxtemperature 47
Temperature test returned OK
Starting FAN test:
Fan 0 not present
Fan 1 running at rpm 11336
Fan 2 running at rpm 11336
Fan 3 running at rpm 11118
Fan 4 not present
FAN test returned OK
Starting Connector test:
Connector test returned OK
Starting Onboard ibdevice test:
Switch OK
Bridge-0 OK
Bridge-1 OK
All Internal ibdevices OK
Onboard ibdevice test returned OK
Starting SSD test:
SSD test returned OK
Starting Auto-link-disable test:
Auto-link-disable test returned OK
Environment test PASSED
FabMan@gateway_name->
```

Related Information

- `checkboot` Command
- `checkpower` Command
- `checkvoltages` Command
- `connector` Command
- `getfanspeed` Command
- `showtemps` Command
- Linux Shells for Hardware Commands

`fwverify` Command

Checks firmware integrity.

Syntax

```
fwverify [-s]
```

Description

This hardware command checks if the firmware installed is corrupted or has been tampered with. The command first makes a comparison of the installed RPM packages to a predefined list of what RPM packages should be installed for the given firmware version. This list was generated at the time of the firmware image build. The `fwverify` command then performs a verification for each installed package using the `rpm --verify` command.

Use the `-s` option to perform a short check, requiring about a minute's time. Without the `-s` option, the `fwverify` command can take up to 20 minutes to perform an in-depth check of the firmware.

Should the command find a missing, corrupt, or additional package or file, the command will display the package or file name, and its location in the filesystem. The conditions of the error are displayed as an 8-character string of flags, **SM5DLUGT**, where:

- **S** – File size differs.
- **M** – Mode (including permissions and file type) differs.
- **5** – MD5 sum differs.
- **D** – Device major/minor number mis-match.
- **L** – `readlink(2)` path mis-match.
- **U** – User ownership differs.
- **G** – Group ownership differs.
- **T** – mtime differs.
- **.** – Flag was not set (no error).

The `fwverify` command is available from the `/SYS/Switch_Diag`, `/SYS/Gateway_Mgmt`, and `/SYS/Fabric_Mgmt` Linux shell targets of the Oracle ILOM CLI interface.

Example

This example shows how to perform a quick verification with the `fwverify -s` command, with successful results.

```
FabMan@gateway_name->fwverify -s
Checking all present packages:
```

```
.....
.....
..... OK

Checking if any packages are missing:
.....
.....
..... OK

Checking FW Coreswitch:
  FW Version: 7.4.3002 OK
  PSID: SUNX2826_I40_003 OK
  Verifying image integrity OK

Checking FW Bridge-0:
  FW Version: 8.6.2010 OK
  PSID: SUNX2826_BX0_006 OK
  Verifying image integrity OK

Checking FW Bridge-1:
  FW Version: 8.6.2010 OK
  PSID: SUNX2826_BX1_006 OK
  Verifying image integrity OK
```

FabMan@gateway_name->

This example shows how to perform an in-depth verification of the firmware integrity with the `fwverify` command.

```
FabMan@gateway_name->fwverify
Checking all present packages:
.....
.....
..... OK

Checking if any packages are missing:
.....
.....
..... OK

Verifying installed files:
..... FAILED
* Package nm2gw-phs-2.2.2-6.i386:
S.5....T /etc/init.d/dcs
.
.
.
FabMan@gateway_name->
```

In this example, within the `nm2gw-phs-2.2.2-6.i386` RPM package, the `/etc/init.d/dcs` file size differs, the MD5 sum differs, and the time differs

Related Information

- `version` Command (Hardware)
- Linux Shells for Hardware Commands

showvlan Command

Displays VLANs.

Syntax

```
showvlan [-h]
```

Description

This hardware command displays the VLANs associated to the gateway connectors. The `-h` option provides help. This table describes each of the columns of the output.

| Column Heading | Description |
|----------------|---|
| Connector/LAG | LAG name or gateway connector (0A-ETH-1 to 0A-ETH-4 or 1A-ETH-1 to 1A-ETH-4). |
| VLAN | VLAN identifier. A VLAN identifier of 0, -1, or NO indicates that there is no VLAN assigned. |
| PKEY | The combination of the P_Key and the P_Key membership bit. The P_Key membership bit is the most significant bit of the two-byte value assigned to the respective P_Key. To simplify, subtract 0x8000 from the value seen in the PKEY column to determine the actual P_Key value. For example: PKEY column value ffff - 0x8000 = P_Key 0x7fff |

The `showvlan` command is available from the `/SYS/Gateway_Mgmt` and `/SYS/Fabric_Mgmt` Linux shell targets of the Oracle ILOM CLI interface.

Example

This example shows how to display the VLANs associated with all connectors using the `showvlan` command.

Note - Your output will differ from that in the example.

```
FabMan@gateway_name->showvlan
```

| Connector/LAG | VLN | PKEY |
|---------------|-----|------|
| 0A-ETH-1 | 3 | ffff |
| 0A-ETH-1 | 0 | ffff |
| 0A-ETH-2 | 3 | ffff |
| 0A-ETH-2 | 0 | ffff |
| 0A-ETH-3 | 3 | ffff |
| 0A-ETH-3 | 0 | ffff |
| 0A-ETH-4 | 3 | ffff |
| 0A-ETH-4 | 0 | ffff |
| 1A-ETH-1 | 3 | ffff |
| 1A-ETH-1 | 0 | ffff |
| 1A-ETH-2 | 3 | ffff |
| 1A-ETH-2 | 0 | ffff |
| 1A-ETH-3 | 3 | ffff |
| 1A-ETH-3 | 0 | ffff |
| 1A-ETH-4 | 3 | ffff |
| 1A-ETH-4 | 0 | ffff |

```
FabMan@gateway_name->
```

Related Information

- `createvlan` Command
- `deletevlan` Command
- Linux Shells for Hardware Commands

showvnics Command

Displays VNIC information.

Syntax

```
showvnics
```

Description

This hardware command displays VNICs and their parameters. The list of VNICs is in ascending order, with priority in this sequence:

- Connector number
- GUID
- State
- MAC address

This table describes each of the columns of the output.

| Column Heading | Description |
|----------------|--|
| ID | VNIC ID number. Roughly indicates creation sequence. |
| STATE | Logical state of the VNIC. Can be: <ul style="list-style-type: none"> ■ Up ■ Down ■ Active ■ Disabled |
| FLG | <ul style="list-style-type: none"> ■ H – VNIC created by Host Manual Mode. ■ N – VNIC created by Gateway Manual Mode. ■ A – VNIC created by Gateway Automatic Mode. |
| IOA_GUID | The IO adapter's GUID, presented as eight colon-delimited hexadecimal pairs. Not to be confused with a MAC address. |
| NODE | Node description. Might also be a fully qualified hostname. |
| IID | Identifier assigned to the VNIC by the host. Not to be confused for the ID (VNIC ID). |
| MAC | VNIC MAC address. |
| VLN | VLAN identifier. A VLAN identifier of 0, -1, or N0 indicates that there is no VLAN assigned. |
| PKEY | <p>The combination of the P_Key and the P_Key membership bit. The P_Key membership bit is the most significant bit of the two-byte value assigned to the respective P_Key.</p> <p>To simplify, subtract 0x8000 from the value seen in the PKEY column to determine the actual P_Key value.</p> <p>For example:</p> <p>PKEY column value ffff - 0x8000 = P_Key 0x7fff</p> |
| GW | Gateway connector. 0A-ETH-1 to 0A-ETH-4 and 1A-ETH-1 to 1A-ETH-4. |

The `showvnics` command is available from the `/SYS/Gateway_Mgmt` and `/SYS/Fabric_Mgmt` Linux shell targets of the Oracle ILOM CLI interface.

Example

This example shows how to display the state of the VNICs with the `showvnic` command.

Note - Your output will differ from that in the example.

```
FabMan@gateway_name->showvnic
ID STATE   FLG IOA_GUID          NODE      IID  MAC              VLN PKEY
GW
-----
-----
  9 UP      N 00:03:BA:00:01:00:E3:71 mnm34-60 0000 02:02:02:02:02:07 NO  9002 0A-
ETH-1
  8 UP      N 00:03:BA:00:01:00:E3:72 mnm34-60 0000 02:02:02:02:02:06 NO  9002 0A-
ETH-1
  4 UP      N 00:03:BA:00:01:00:E3:71 mnm34-60 0000 02:02:02:02:02:03 NO  ffff 0A-
ETH-2
  5 UP      N 00:03:BA:00:01:00:E3:71 mnm34-60 0002 02:02:02:02:02:04 NO  ffff 0A-
ETH-2
  3 DISABLED N 00:03:BA:00:01:00:E3:71 mnm34-60 0000 02:02:02:02:02:02 NO  ffff 0A-
ETH-2
  6 UP      N 00:03:BA:00:01:00:E3:72 mnm34-60 0000 02:02:02:02:02:05 NO  ffff 0A-
ETH-2
  7 UP      N 00:03:BA:00:01:00:E3:71 mnm34-60 0000 02:02:02:02:02:01 NO  ffff 0A-
ETH-3
FabMan@gateway_name->
```

Related Information

- `createvnic` Command
- `deletevnic` Command
- `disablevnic` Command
- `enablevnic` Command
- Linux Shells for Hardware Commands

smpartition Command

Manages the partition configuration.

Syntax

`smpartition subcommand [-h]`

This hardware command has subcommands that determine its functionality.

| Subcommand Syntax | Description |
|---|--|
| <code>peerversion</code> | Displays the firmware version of smnode peers of the master Subnet Manager. |
| <code>start [tid]</code> | Initiates a new configuration based upon a currently used configuration. |
| <code>create [tid tid] [-n partition_name] -pkey P_Key [use_grh] [-m defmember] [-flag [ipoib [mtu mtu][rate rate][sl sl][scope scope]]]</code> | Creates a new partition. The <code>-m</code> option configures the default membership for the partition. |
| <code>delete [tid tid] -n partition_name -pkey P_Key</code> | Deletes a partition. |
| <code>add [tid tid] -n partition_name -pkey P_Key -port port ALL_CAS ALL_SWITCHES ALL_ROUTERS [-m member]</code> | Adds one or more ports to the partition. The <code>-m</code> option sets the membership for the ports. |
| <code>remove [tid tid] -n partition_name -pkey P_Key -port port ALL_CAS ALL_SWITCHES ALL_ROUTERS</code> | Removes one or more ports to the partition. |
| <code>modify [tid tid] -n partition_name -pkey P_Key [-flag [ipoib [mtu mtu][rate rate][sl sl][scope scope]]][-port port ALL_CAS ALL_SWITCHES ALL_ROUTERS [-m member]]</code> | Modifies a partition flag or port membership. The <code>-m</code> option sets the membership for the ports. |
| <code>list active modified [no-page]</code> | Displays the active or modified configuration. By default, the output is displayed one page at a time, advanced by pressing the spacebar. The <code>no-page</code> option enables a continuous stream of output without page breaks. |
| <code>listcurrenttid</code> | Lists the current transaction ID. |
| <code>commit [tid tid]</code> | Commits the modified configuration to become the active configuration. |
| <code>abort [tid tid]</code> | Abruptly ends the configuration session. All modified configuration information is lost, and the active configuration remains unchanged. |

where:

- `tid` is the transaction ID (0 to 4294967295).
- `partition_name` is an alphanumeric tag to the IB partition (optional).
- `P_Key` is the partition key (1 to 7fff or default).

Note - You cannot delete the predefined partitions with P_Keys 1 and 7fff.

- `defmember` is the default membership type (full, limited, or both) for the partition.

Note - If ports are added to the partition without specifying the membership type, the default membership type is applied to the port.

- *mtu* is the number that maps to the actual MTU (1 to 5).

| <i>mtu</i> Number | 1 | 2 | 3 | 4 | 5 |
|-------------------|-----|-----|------|------|------|
| MTU Value | 256 | 512 | 1024 | 2048 | 4096 |

- *rate* is the number that maps to the actual throughput of a link (link width + link speed) (2 to 10).

| <i>rate</i> Number | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|--------------------|-----|----|----|---|----|----|----|----|-----|
| Rate Value in Gbps | 2.5 | 10 | 30 | 5 | 20 | 40 | 60 | 80 | 120 |

- *sl* is the service level (0 to 15).

Note - Use service level 1 (*sl* 1) only for low-latency, high-priority, small-message, low-bandwidth traffic. Use other service levels for regular, high-bandwidth traffic.

- *scope* is the multicast address scope value (1 to 14).

Note - The *mtu*, *rate*, *sl*, and *scope* parameters are for the multicast group created when *ipoib* (IP over IB) is configured for the partition. Typically, these values are not specified as the defaults are sufficient for the fabric configuration.

- *port* is the GUID of the port, or the special parameter, to add, remove, or modify:
 - ALL_CAS – All CAs in the IB fabric.
 - ALL_SWITCHES – All switches.
 - ALL_ROUTERS – All routers.
- *member* is the membership type (*full*, *limited*, or *both*) for the port.

Description

This hardware command manages the IB partitions and is available only on management controllers that are hosting the primary (or master) Subnet Manager. There are two configurations for the IB partition, the active configuration and the modified configuration.

When configuring a partition, you must initiate the configuration session with the `smpartition start` command. During the session, you create a modified copy of the active configuration. To end the session, you must use the `smpartition commit` command to make the modified configuration the active configuration. Once committed, the active configuration is distributed to all Subnet Managers in the IB fabric where the management controller's IP addresses are listed in the Subnet Manager nodes file.

The Subnet Manager nodes file must exist in every management controller file system. The file contains a list of IP addresses of all active management controllers hosting a Subnet Manager in your fabric. The file should have an entry for every Sun Network QDR InfiniBand Gateway Switch and Sun Datacenter InfiniBand Switch 36 that runs a Subnet Manager in your IB fabric.

Note - If the Subnet Manager nodes of your IB fabric ever change (disabled, added, and so on), you must update all copies of the Subnet Manager nodes file and the fabric element configuration file. See “smnodes Command” on page 125 and “createfabric Command” on page 21.

Options

This table describes the options to the `smpartition` command and their purposes.

| Option | Purpose |
|----------------------|--|
| <code>tid</code> | Specifies the transaction ID. The transaction ID adds an additional layer of security to the <code>smpartition</code> command. The identifier is a 32-bit unsigned integer, returned when the partition configuration session is started with the <code>smpartition start tid</code> command. This identifier is then required for all subsequent actions to the particular partition. Use of the transaction ID mediates changes to the partition by multiple users. |
| <code>-n</code> | Specifies the partition name. |
| <code>-pkey</code> | Specifies the partition key. |
| <code>use_grh</code> | If the <code>use_grh</code> option is used in the <code>smpartition create</code> command, a requirement of the partition is that Global Route Headers (GRH) are attached to IB messages and are used for path resolution requests made to the Subnet Manager. This option provides additional security for Engineered Systems. |
| <code>-m</code> | Specifies the membership type. If the <code>-m</code> option is used in the <code>smpartition create</code> command, the default membership type of the partition is specified. If the <code>-m</code> option is used with the <code>smpartition add</code> command or <code>smpartition modify</code> command, the membership type of the port is specified. If ports are added to the partition without specifying the membership type, the default membership type for the partition is applied to the port. |
| <code>-port</code> | Specifies the port or ports to be acted upon: ■ <code>port</code> – The GUID of the port to be acted upon. |

| Option | Purpose |
|--------|---|
| | Alternatively, one these special parameters is specified instead of a GUID: |
| | <ul style="list-style-type: none"> ■ ALL_CAS – All CAs in the IB fabric. ■ ALL_SWITCHES – All switches. ■ ALL_ROUTERS – All routers. |
| -flag | <p>Specifies:</p> <ul style="list-style-type: none"> ■ ipoib – If present, IP over IB is to be supported. ■ mtu – Sets the MTU. ■ rate – Sets the throughput of a link (link width + link speed). ■ sl – Sets the service level. ■ scope – Sets the multicast address scope. <p>Note - The -flag option by itself disables IPoIB.</p> <p>If you use the -flag option in the <code>smpartition modify</code> command, you must restart the master Subnet Manager or perform a Subnet Manager handover after the <code>smpartition commit</code> command. Because this causes an interruption of service, if you want flag parameters different than the default, consider setting partition flags at the time of partition creation.</p> |
| -h | Provides help. |

Example

This example shows how to display the active configuration of the IB partition with the `smpartition` command.

```
FabMan@gateway_name->smpartition list active
# Sun DCS IB partition config file
# This file is generated, do not edit
#! version_number : 16
Default=0x7fff, ipoib : ALL_CAS=full, ALL_SWITCHES=full, SELF=full;
SUN_DCS=0x0001, ipoib : ALL_SWITCHES=full;
part1 = 0x9001,ipoib:
0x0002c90300089138=full,
0x0002c9030008923b=full,
0x0002c9030008923c=full,
0x0002c90300089103=limited,
0x0002c90300089104=full,
0x0002c90300089137=limited;
part2 = 0x9002,ipoib:
0x0003ba000100e389=full,
0x0002c903000890cb=limited,
0x0002c903000890cc=full,
0x0002c903000890c8=full,
0x0002c903000890c7=limited;
FabMan@gateway_name->
```

Related Information

- *Gateway Administration*, partitioning the IB fabric
- `setdefaultgwdiscpkey` Command
- `smnodes` Command
- `createfabric` Command
- Linux Shells for Hardware Commands

smsubnetprotection Command

Manages the secret M_Key.

Syntax

`smsubnetprotection subcommand [-h]`

This hardware command has subcommands that determine its functionality. This table describes the *subcommands* and provides their syntax.

| Subcommand Syntax | Description |
|---|---|
| <code>start [-force][-addonly]-deleteonly] [-override-inconsistent-partition-configurations][-override-unavailable-smnodes][tid]</code> | Initiates a new configuration based upon a currently used configuration. Use the <code>-force</code> option or <code>-override-unavailable-smnodes</code> option to bypass the partition daemon check. See “Options” on page 99 . |
| <code>list active modified</code> | Displays a list of active secret M_Keys, the current secret M_Key, and the enabled status, or displays a list of pending M_Keys and the M_Key to be assigned to current status. |
| <code>listlocalmkey</code> | Displays the current local M_Key for an I4 switch chip without a corresponding Subnet Manager and its status. |
| <code>listcurrenttid</code> | Lists the current transaction ID. |
| <code>setlocalsecretmkey M_Key</code> | Sets the secret M_Key locally for an I4 switch chip without a corresponding Subnet Manager. |
| <code>clearlocalmkey</code> | Clears the local secret M_Key. |
| <code>add M_Key [tid tid]</code> | Adds an M_Key to the configuration. |
| <code>delete M_Key [tid tid]</code> | Deletes an M_Key from the configuration. |
| <code>undo [tid tid]</code> | Reverts the previous add, delete, or set-current operation. |
| <code>set-current M_Key [tid tid]</code> | Sets the current M_Key. |

| Subcommand Syntax | Description |
|--|--|
| <code>commit [-force][-override-inconsistent-partition-configurations][-override-unavailable-smnodes][tid <i>tid</i>]</code> | Commits the modified configuration to become the active configuration. Use the <code>-force</code> option or <code>-override-unavailable-smnodes</code> option to bypass the partition daemon check. See “Options” on page 99. |
| <code>abort [tid <i>tid</i>]</code> | Abruptly ends the configuration session. All modified configuration information is lost, and the active configuration remains unchanged. |
| <code>setreplicationpassword <i>password</i> [tid <i>tid</i>]</code> | Configures the replication (and encryption) password. |
| <code>enablesecretmkey [-force][-override-inconsistent-partition-configurations][-override-unavailable-smnodes]</code> | Enables secret M_Key functionality. Use the <code>-force</code> option or <code>-override-unavailable-smnodes</code> option to bypass the partition daemon check. See “Options” on page 99. |
| <code>disablesecretmkey [-force][-override-inconsistent-partition-configurations][-override-unavailable-smnodes]</code> | Disables secret M_Key functionality. Use the <code>-force</code> option or <code>-override-unavailable-smnodes</code> option to bypass the partition daemon check. See “Options” on page 99. |

where:

- *M_Key* is the management key (16 hexadecimal digits).
- *tid* is the transaction ID (0 to 4294967295).
- *password* is encryption string for M_Key replication (8 alphanumeric characters).

Note - The replication *password* is an eight alphanumeric character string used for encrypting communications between Subnet Managers nodes, and all Subnet Managers must be configured with the same string. Because of the password's secure nature, is not readable. Therefore, you must remember the password for when adding Subnet Manager nodes in the future. Should you forget the replication password, you must reconfigure all Subnet Manager nodes with a new replication password.

Description

This hardware command manages the secret M_Key and its implementation. The secret M_Key is a passphrase used by trusted Subnet Managers to securely perform activities (enabling ports, setting parameters, and so on) on the I4 switch chips as well as any end node in the IB fabric.

A readable M_Key is an M_Key operating in a mode, where the node that possesses the M_Key permits the value of the M_Key to be read through in-band operations on the IB fabric, without first specifying the current readable M_Key value. The secret M_Key is an M_Key that cannot be obtained in-band by way of the IB fabric without first knowing the current secret M_Key value.

Use the `smsubnetprotection` command and its subcommands to create and manage the list of secret M_Keys. When configuring a list of secret M_Keys, you first enable secret M_Key

functionality with the `enablesecretmkey` subcommand. Then you initiate the configuration session on the master Subnet Manager with the `smsubnetprotection start` command. During the session, you add or delete secret M_Keys to the configuration, set the current secret M_Key, and list the M_Keys configured.

Note - There is a maximum of 10 secret M_Keys for the configuration.

To end the session, you must use the `smsubnetprotection commit` command to make the configuration active. Once committed, the configuration is automatically distributed to all Subnet Managers in the IB fabric.

Note - You cannot both add and delete secret M_Keys within a single configuration session. You must perform these actions in separate configuration sessions.

If a local secret M_Key is created for an I4 switch chip without a corresponding Subnet Manager, that secret M_Key is only recognized by that I4 switch chip, and is unrecognized by the other I4 switch chips in the IB fabric.

Because of the complexity of the secret M_Key functionality, this table describes the impact of certain scenarios and actions you can take.

| Scenario | Impact and Actions |
|---|--|
| Setting up secret M_Key in a mixed firmware fabric. | <p>If the master Subnet Manager has firmware 2.1, only other Subnet Managers with firmware 2.1 can administer the fabric. For Subnet Managers with firmware 2.0 or lower, the fabric “disappears”.</p> <p>If the master Subnet Manager has firmware 2.0 or lower, you can only set up local secret M_Keys for the I4 switch chips on their respective Subnet Managers with firmware 2.1.</p> <p>Both situations are unsupported.</p> |
| Downgrading firmware after secret M_Key has been enabled. | <p>If the master Subnet Manager is downgraded to firmware 2.0 or lower and there is a standby Subnet Manager with firmware 2.1, the secret M_Key is maintained through the standby Subnet Manager during the master Subnet Manager's reboot. After the reboot, the situation becomes as in the first scenario.</p> <p>If you downgrade any other Subnet Manager to firmware 2.0 or lower, the situation becomes as in the first scenario.</p> <p>Before you downgrade any firmware, disable secret M_Key. Note - Readable M_Key is not affected by a downgrade from firmware 2.1 to 2.0.</p> |
| Upgrading from a lower firmware version. | <p>Do not enable secret M_Key until all Subnet Managers in the fabric are at firmware version 2.1 or higher.</p> |
| Introducing a new Subnet Manager with firmware 2.1 or higher, yet no secret M_Key policy, into a secret M_Key fabric. | <p>Before introducing the new Subnet Manager to the fabric:</p> <ol style="list-style-type: none"> 1. Disable the new Subnet Manager. 2. Set the new Subnet Manager priority to the lowest. 3. Update the <code>smnodes</code> file with the <code>smnodes</code> command. |

| Scenario | Impact and Actions |
|--|---|
| Secret M_Key values are mismatched. | <p>4. Enable the new Subnet Manager.</p> <p>After introducing the new Subnet Manager to the fabric:</p> <ol style="list-style-type: none"> 1. Update the fabric configuration with the <code>fdconfig</code> command. 2. Update the fabric mapping with the <code>createfabric</code> command. 3. Perform a <code>smpartition start</code>, then <code>smpartition commit</code>, then <code>smsubnetprotection start</code>, and finally, <code>smsubnetprotection commit</code> from the master Subnet Manager 4. Return the priority of the new Subnet Manager to its previous value. <p>If you add a Subnet Manager with one set of secret M_Keys to a fabric with a different set of secret M_Keys, the added Subnet Manager is not recognized.</p> <p>Before introducing the new Subnet Manager to the fabric:</p> <ol style="list-style-type: none"> 1. Update the fabrics's master Subnet Manager's list of known secret M_Keys to include the secret M_Keys already configured for the new Subnet Manager, with the <code>smsubnetprotection add</code> command. 2. Do not change the current secret M_Key. 3. Disable the new Subnet Manager. 4. Set the new Subnet Manager priority to the lowest. 5. Update the <code>smnodes</code> file with the <code>smnodes</code> command. 6. Enable the new Subnet Manager. <p>After introducing the new Subnet Manager to the fabric:</p> <ol style="list-style-type: none"> 1. Update the fabric configuration with the <code>fdconfig</code> command. 2. Update the fabric mapping with the <code>createfabric</code> command. 3. Perform a <code>smpartition start</code>, then <code>smpartition commit</code>, then <code>smsubnetprotection start</code>, and finally, <code>smsubnetprotection commit</code> from the master Subnet Manager 4. Set the secret M_key policy as desired from the master Subnet Manager. 5. Return the priority of the new Subnet Manager to its previous value. |
| Merging two or more subnets into one fabric. | <p>If each subnet is configured with different secret M_Key policies, then the subnets will not “see” each other and will act independently.</p> <p>If one subnet is without a secret M_Key policy, then the subnet with a secret M_Key policy controls the subnet without.</p> <p>If each subnet is configured with identical secret M_Key policies, they merge into a single subnet.</p> <p>Before physically merging the subnets:</p> <ol style="list-style-type: none"> 1. Set the priority of one master Subnet Manager to lower than the other. 2. Configure the soon-to-be master Subnet Manager of the combined subnets with partition information from both subnets with the <code>smpartition</code> command. 3. Update the soon-to-be master Subnet Manager's list of known secret M_Keys to include the secret M_Keys already configured for the other subnet, with the <code>smsubnetprotection add</code> command. 4. Do not change the current secret M_Key. |

| Scenario | Impact and Actions |
|----------|--|
| | <p>After physically merging the subnets:</p> <ol style="list-style-type: none"> 1. Update the smnode files for all smnodes of both subnets with the smnodes command. 2. Configure both subnets with the new fabric configuration with the fdconfig command. 3. Correlate both subnets to the new fabric mapping with the createfabric command. 4. Perform a smpartition start, then smpartition commit, then smsubnetprotection start, and finally, smsubnetprotection commit from the now master Subnet Manager. 5. Set the secret M_key policy as desired from the master Subnet Manager. |

This table describes each of the columns of the output of the smsubnetprotection command.

| Column Heading | Description |
|----------------|---|
| Mkey | Secret M_Keys provided by the user for trusted devices. |
| Untrusted Mkey | Secret M_Keys generated from user input, for untrusted devices. |
| Smkey | SMKeys are used in communication between the Subnet Managers. |
| Attribute | <p>The attribute of the M_Key:</p> <ul style="list-style-type: none"> ■ C – The current secret M_Key. ■ S – The standby secret M_Key about to become current. |

The smsubnetprotection command is available from the /SYS/Fabric_Mgmt Linux shell target of the Oracle ILOM CLI interface.

Options

This table describes the options to the smsubnetprotection command and their purposes.

| Option | Purpose |
|---|--|
| -force | Specifies the action to bypass the partition daemon check and perform the operation even though not all smnodes are available or communicating with the management network. The -force option is synonymous with the -override-unavailable-smnodes option. |
| -addonly | Specifies that the session is only to add secret M_Keys to the configuration. |
| -deleteonly | Specifies that the session is only to delete secret M_Keys from the configuration. |
| -override-inconsistent-partition-configurations | Specifies that the check for partition consistency across smnodes is bypassed. Before updating the secret M_Key configuration, all smnodes to use that secret M_Key must have the same partition configuration. If not, the user is warned of that situation during the secret M_Key configuration update. This option overrides the check, and permits the secret M_Key configuration to be used, regardless of the consequences. Use of this option compromises the integrity of the fabric. |

| Option | Purpose |
|-------------------------------|--|
| -override-unavailable-smnodes | Specifies the action to bypass the partition daemon check and perform the operation, even though not all smnodes are available or communicating with the management network. The -override-unavailable-smnodes option is synonymous with the -force option. |
| tid | Specifies the transaction ID. The transaction ID adds an additional layer of security to the smsubnetprotection command. The identifier is a 32-bit unsigned integer, returned when the secret M_Key configuration is created (smsubnetprotection start) with the tid option. This identifier is then required for all subsequent actions to the secret M_Key configuration. Use of the transaction ID mediates changes to the secret M_Key configuration by multiple users. |

Example

This example shows how to display the active secret M_Keys with the smsubnetprotection command.

```
FabMan@gateway_name->smsubnetprotection list active
# File_format_version_number 1
# Sun DCS IB mkey config file
# This file is generated, do not edit
# secretmkey=enabled
# nodeid=o4nm2-gw-6
# time=15 Sep 03:54:46
# checksum=378d9b09744e1d8b8ba6ae868c99d0c9
#! commit_number : 3
Mkey                Untrusted Mkey          Smkey                    Attribute
-----
0x00abcdefabcdef01  0x1aa45124fee612ae      0x15fc26aea300f831
0x00abcdefabcdef02  0x4ccd8230de6cd348      0x3fc7e6ad701a8a2a
0x00abcdefabcdef03  0x9baa1debcc74de5e      0x1b253003600d137b    C
FabMan@gateway_name->
```

Related Information

- *Gateway Administration*, securing the fabric
- *Linux Shells for Hardware Commands*

toolbox Command

Starts the Toolbox CLI utility.

Syntax

```
toolbox [?]
```

Description

This hardware command starts the Toolbox CLI utility. This utility automates and simplifies IB partition management and other tasks, and also provides other information about the IB fabric. The utility uses a daemon to monitor the state of the master Subnet Manager, and propagate smnodes list and fabric configuration information to other Subnet Managers in the fabric. The daemon is secret M_Key aware, and performs its duties securely.

After typing the `toolbox` command, the prompt changes to `[toolbox-cli]`, indicating the Toolbox CLI instance. The following functionality is available in the Toolbox CLI utility:

- Maintaining the smnodes list
- Managing the fabric configuration
- Managing and configuring partitions
- Managing and configuring Subnet Managers
- Replacing GUIDs in configurations
- Backing up and restoring configurations
- Displaying port and event logs
- Displaying host and switch information

The `?` option provides help.

More information about the Toolbox CLI is available in [“Understanding Toolbox CLI Commands” on page 102](#).

Example

This example shows how to get help for the `toolbox` command.

```
FabMan@gateway_name-> toolbox ?
```

```
List of available top level commands. (Type help <topic>)
=====
```

```
add      :   Add IB Partition.
```

```
show      : Show IB Partition, SM, Hosts, Switches, Logs.  
set       : Modify IB Partition, SM.  
remove    : Delete IB Partition.  
quit      : Exit CLI  
manage    : Modify IB Partition (replace GUID),
```

FabMan@gateway_name->

Related Information

- [“Understanding Toolbox CLI Commands” on page 102](#)

Understanding Toolbox CLI Commands

These topics describe the TOOLBOX CLI commands.

- [“Toolbox CLI Command Construct” on page 103](#)
- [“api-key Object Command” on page 103](#)
- [“backups Object Command” on page 104](#)
- [“config Object Commands” on page 104](#)
- [“daemon Object Command” on page 105](#)
- [“hosts Object Commands” on page 105](#)
- [“log Object Command” on page 106](#)
- [“mkey Object Command” on page 107](#)
- [“partition Object Commands” on page 107](#)
- [“settings Object Commands” on page 108](#)
- [“sm Object Commands” on page 109](#)
- [“switch Object Commands” on page 109](#)
- [“switches Object Command” on page 110](#)
- [“version Object Command” on page 110](#)

Related Information

- [“Understanding the Toolbox CLI” on page 16](#)
- [“Understanding Hardware Commands” on page 79](#)

Toolbox CLI Command Construct

Toolbox CLI commands are constructed from five types of components, in this format:

```
action1 object1 [action2|object2|option][option][option] . . .
```

where:

- *action1* is the primary action performed on *object1*.
- *object1* is the object that *action1* acts upon.
- *action2* is the secondary action performed under the condition of *object2*.
- *object2* is the object that sets a condition to either *action1* or *action2*.
- *option* is a parameter that is affected or applied with the command.

To simplify finding information about a command, the command reference is organized alphabetically by the object (*object1* of the command), the second word of the command construct.

Each object has a table that lists what you are able to do with the object, and the command to achieve that goal.

Related Information

- [“toolbox Command” on page 100](#)
- [“Understanding the Toolbox CLI” on page 16](#)

api-key Object Command

| Description | Syntax |
|----------------------|--------------|
| Display the API key. | show api-key |

Related Information

- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

backups Object Command

| Description | Syntax |
|--|--------------|
| Display all backups available in the fabric configuration. | show backups |

Related Information

- [“Display Switch Backups \(Toolbox CLI\)” on page 46](#)
- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

config Object Commands

| Description | Syntax |
|---|---|
| Back up switch configuration | set config backup switch= <i>name</i> all |
| Disable the switch configuration. | set config disable switch= <i>name</i> new_mkey= <i>M_Key</i> |
| Display the fabric configuration file. | show config |
| Distribute the fabric configuration on this switch to another switch. | set config copy [ip= <i>peer_IP_address</i> name= <i>peer_hostname</i> all] |
| Restore the switch configuration from backup. | set config restore new_ip= <i>local_IP_address</i> old_sm= <i>sm_name</i> {local backup= <i>filename</i> peer (name= <i>peer_hostname</i> ip= <i>peer_IP_address</i>) backup= <i>filename</i> remote backup= <i>URL</i> fabric= <i>fabric_name</i> rack= <i>rack_name</i> } [state= <i>sm_state</i>] |
| Run the fabric configuration wizard. | set config wizard |

where:

- *name* is the host name of the switch.
- *M_Key* is the 16-hex digit management key. For example 0xa000000000000001.
- *peer_IP_address* is the IP address of the peer switch.
- *peer_hostname* is the host name of the peer switch to receive or having the configuration.
- *local_IP_address* is the IP address of the management controller on the switch.
- *sm_name* is the previous host name of the Subnet Manager on the switch.
- *filename* is the file name of the backup configuration.

- *URL* is the URL of the remote server backup file location.
- *fabric_name* is the name of the fabric to which the switch will belong.
- *rack_name* is the name of the rack to which the switch will belong.
- *sm_state* is the state of the Subnet Manger after restoration, either enabled or disabled.

Related Information

- [“Display the Fabric Configuration File \(Toolbox CLI\)” on page 25](#)
- [“Run the Fabric Configuration Wizard \(Toolbox CLI\)” on page 27](#)
- [“Distribute the Fabric Configuration \(Toolbox CLI\)” on page 31](#)
- [“Back Up a Switch Configuration \(Toolbox CLI\)” on page 47](#)
- [“Disable a Switch \(Toolbox CLI\)” on page 48](#)
- [“Restore a Switch \(Toolbox CLI\)” on page 49](#)
- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

daemon Object Command

| Description | Syntax |
|---------------------------------------|---------------------------|
| Enable or disable the toolbox daemon. | set daemon enable disable |

Related Information

- [“Enable or Disable the Toolbox CLI Daemon” on page 23](#)
- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

hosts Object Commands

| Description | Syntax |
|--------------------------------------|---|
| Display the IB hosts. | show hosts |
| Display the IB hosts in a partition. | show hosts pname= <i>partition_name</i> pkey= <i>P_Key</i> |

| Description | Syntax |
|---|--|
| Display the IB hosts in the fabric. | <code>show hosts fabric</code> |
| Display the IB hosts visible to a node or GUID. | <code>show hosts visible-from nodedesc=<i>node_description</i> nodeguid=<i>node_guid</i> portguid=<i>port_guid</i></code> |

where:

- *partition_name* is the name of the partition.
- *P_Key* is the partition key for the partition.
- *node_description* is the node description.
- *node_guid* is the node GUID.
- *port_guid* is the port GUID.

Related Information

- [“Display Host Partition Information \(Toolbox CLI\)” on page 51](#)
- [“Display All Hosts in the Fabric \(Toolbox CLI\)” on page 52](#)
- [“Display Hosts Visible From a Node \(Toolbox CLI\)” on page 53](#)
- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

Log Object Command

| Description | Syntax |
|--------------------------------|---|
| Display the local port log. | <code>show log ports local=True</code> |
| Display the remote switch log. | <code>show log ports local=False ip=<i>IP_address</i> switch=<i>name</i></code> |
| Display the switch event log. | <code>show log sm [event=backup disable replace]</code> |

Related Information

- [“Display the Local Port Log \(Toolbox CLI\)” on page 59](#)
- [“Display the Remote Switch Port Log \(Toolbox CLI\)” on page 59](#)
- [“Display the Switch Event Log \(Toolbox CLI\)” on page 60](#)
- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

mkey Object Command

| Description | Syntax |
|-------------------|-----------|
| Display the M_Key | show mkey |

Related Information

- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

partition Object Commands

| Description | Syntax |
|--|---|
| Add a port to a partition. | set partition name= <i>partition_name</i> pkey= <i>P_Key</i> add port portguid= <i>GUID</i> -m=(full limited both) |
| Create a partition. | add partition name= <i>partition_name</i> pkey= <i>P_Key</i> [[-defmember -ipoib -mtu -rate -sl -scope]= <i>val</i>] |
| Display a particular partition. | show partition name= <i>partition_name</i> pkey= <i>P_Key</i> |
| Display all partitions. | show partition all |
| Display all ports of all partitions. | show partition all ports |
| Display the partitions having a particular port. | show partition port= <i>GUID</i> |
| Display the ports of a particular partition. | show partition name= <i>partition_name</i> pkey= <i>P_Key</i> ports |
| Modify a partition. | set partition name= <i>partition_name</i> pkey= <i>P_Key</i> [[-newname -defmember -ipoib -mtu -rate -sl -scope]= <i>val</i>] |
| Modify a port of a partition. | set partition name= <i>partition_name</i> pkey= <i>P_Key</i> set port portguid= <i>GUID</i> -m=(full limited both) |
| Remove a port from a partition. | set partition name= <i>partition_name</i> pkey= <i>P_Key</i> remove port portguid= <i>GUID</i> |
| Remove a or all partitions. | remove partition name= <i>partition_name</i> pkey= <i>P_Key</i> all |
| Replace a GUID within a partition. | manage partition replace-guid current= <i>GUID</i> new= <i>GUID</i> |

where:

- *partition_name* is the name of the partition.
- *P_Key* is the partition key for the partition.

- *GUID* is the GUID.
- *val* is the value respective of the partition parameter.

Related Information

- [“Display a Partition \(Toolbox CLI\)” on page 33](#)
- [“Create a Partition \(Toolbox CLI\)” on page 36](#)
- [“Add a Port to a Partition \(Toolbox CLI\)” on page 38](#)
- [“Modify a Partition \(Toolbox CLI\)” on page 37](#)
- [“Remove a Partition \(Toolbox CLI\)” on page 41](#)
- [“Replace a GUID Manually \(Toolbox CLI\)” on page 54](#)
- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

settings Object Commands

Note - These two commands effectively modify and display the contents of the `/etc/toolbox/conf/toolbox.conf` file.

| Description | Syntax |
|--|--|
| Display the Toolbox CLI configuration properties. | <code>show settings [property]</code> |
| Set a value to a Toolbox CLI configuration property. | <code>set settings property=value</code> |

where:

- *property* is the property to act upon. See [“Toolbox CLI Settings Properties” on page 21](#).
- *value* is the value to be assigned to the *property*.

Related Information

- [“Display the Toolbox CLI Settings” on page 19](#)
- [“Modify the Toolbox CLI Settings” on page 20](#)
- [“Toolbox CLI Settings Properties” on page 21](#)
- [“Toolbox CLI Command Construct” on page 103](#)

- [“toolbox Command” on page 100](#)

sm Object Commands

| Description | Syntax |
|------------------------------------|---|
| Configure a Subnet Manager. | <code>set sm name=<i>name</i> ip=<i>ip</i> action=(enable disable) [[[<i>-priority</i>]-<i>controlledhandover</i>]-<i>prefix</i>]-<i>mkey</i>]=<i>val</i>]</code> |
| Display all Subnet Managers. | <code>show sm all</code> |
| Display the master Subnet Manager. | <code>show sm master</code> |

where:

- *name* is the host name of the management controller hosting the Subnet Manager.
- *ip* is the IP address of the management controller hosting the Subnet Manager.
- *val* is the value respective of the Subnet Manager parameter.

Related Information

- [“Display Subnet Manager Status \(Toolbox CLI\)” on page 42](#)
- [“Enable or Disable a Subnet Manager \(Toolbox CLI\)” on page 43](#)
- [“Configure a Subnet Manager \(Toolbox CLI\)” on page 44](#)
- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

switch Object Commands

| Description | Syntax |
|---|--|
| Add a switch to the fabric configuration file. | <code>add switch name=<i>hostname</i> ip=<i>mgmt_eth_ip</i> rack=<i>rack_name</i> fabric=<i>fabric_name</i> sm=enabled disabled</code> |
| Remove a switch from the fabric configuration file. | <code>remove switch name=<i>hostname</i> ip=<i>mgmt_eth_ip</i></code> |

where:

- *hostname* is the host name of the management controller.
- *mgmt_eth_ip* is the IP address of the management controller.
- *rack_name* is the identifier of the rack.
- *fabric_name* is the identifier of the fabric.

Related Information

- [“Add a Switch to the Fabric Configuration \(Toolbox CLI\)” on page 30](#)
- [“Remove a Switch From the Fabric Configuration \(Toolbox CLI\)” on page 31](#)
- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

switches Object Command

| Description | Syntax |
|-------------------------|---------------|
| Display all IB switches | show switches |

Related Information

- [“Display Switch Information \(Toolbox CLI\)” on page 46](#)
- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

version Object Command

| Description | Syntax |
|----------------------------------|--------------|
| Display the Toolbox CLI version. | show version |

Related Information

- [“Display the Toolbox CLI Version” on page 19](#)

- [“Toolbox CLI Command Construct” on page 103](#)
- [“toolbox Command” on page 100](#)

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