Sun Datacenter InfiniBand Switch 36 Documentation Supplement for Firmware Version 2.2

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Contents

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 Datacenter InfiniBand Switch 36
- **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/E76424_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 Datacenter InfiniBand Switch 36 Installation Guide for Firmware Version 2.1*.

Related Information

Electrical Specifications

This table lists the electrical requirements of the switch.

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 devided 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 switch is identified by its node description. The node description is of this format:

`SUN DCS 36P QDR` *hostname mc_IP*

where:

- *hostname* is the host name of the switch and a maximum of 17 characters. Any additional characters are truncated.
- *mc_IP* is the IP address of the management controller in the switch.

For example:

```
SUN DCS 36P QDR IBSwitch-03 123.45.67.89
```

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 Datacenter InfiniBand Switch 36 Administration Guide for Firmware Version 2.1*.

Related Information

Understanding the Toolbox CLI

These topics describe using the Toolbox CLI utility.

Related Information

Performing Basic Toolbox CLI Tasks

These tasks start and configure the Toolbox CLI interface.

Related Information

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`, an 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 91.

Related Information

- "Start the Toolbox CLI" on page 13
- "Display the Toolbox CLI Version" on page 14
- "Display the Toolbox CLI Settings" on page 14
- "Modify the Toolbox CLI Settings" on page 15
- "Toolbox CLI Settings Properties" on page 16
- "Enable or Disable the Toolbox CLI Daemon" on page 18

▼ 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 12
- "Display the Toolbox CLI Version" on page 14
- "Display the Toolbox CLI Settings" on page 14
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▼ 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 12
- "`version` Object Command" on page 100
- "Start the Toolbox CLI" on page 13
- "Display the Toolbox CLI Settings" on page 14
- "Modify the Toolbox CLI Settings" on page 15
- "Toolbox CLI Settings Properties" on page 16
- "Enable or Disable the Toolbox CLI Daemon" on page 18

▼ 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 16. 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                   : mailrelayserver.domain.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 12
- “`settings` Object Commands” on page 97
- “Start the Toolbox CLI” on page 13
- “Display the Toolbox CLI Version” on page 14
- “Modify the Toolbox CLI Settings” on page 15
- “Toolbox CLI Settings Properties” on page 16
- “Enable or Disable the Toolbox CLI Daemon” on page 18

▼ 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 16.
- *value* is the value for the *property*.

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

```
[toolbox-cli] set settings MAIL_SEND_TO=nobody@yahoogle.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 18.

Related Information

- "Toolbox CLI Overview" on page 12
- "`settings` Object Commands" on page 97
- "Start the Toolbox CLI" on page 13
- "Display the Toolbox CLI Version" on page 14
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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.	`/var/log/toolbox_access.log`
`ALERTS_CHECK_TIME`	Polling interval for Toolbox CLI daemon to check for port events in between scans. In seconds.	`30`
`ALERT_LOG`	Toolbox CLI alert log file.	`/var/log/toolbox_alerts.log`
`API_KEY`	A 128-bit SHA key for authenticating REST requests.	`VyAu4EfcLpDNbf7FJCUmFgXbwd4`
`API_KEY_FILE`	Alternative key file for other authentication schemes.	`/var/run/toolbox.key`
`AUTO_FENCE`	Automatically fence off an unresponsive switch in the fabric. `0`=no, `1`=yes.	`0`
`BACKUP_DIR`	Directory where switch backup files are stored.	`/etc/toolbox/backups`

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 12
- "`settings` Object Commands" on page 97
- "Start the Toolbox CLI" on page 13
- "Display the Toolbox CLI Version" on page 14
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▼ 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 22.

- **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 12
- "daemon Object Command" on page 94
- "Start the Toolbox CLI" on page 13
- "Display the Toolbox CLI Version" on page 14
- "Display the Toolbox CLI Settings" on page 14
- "Modify the Toolbox CLI Settings" on page 15
- "Toolbox CLI Settings Properties" on page 16

Administering the Fabric Configuration (Toolbox CLI)

These tasks dispaly and manage the fabric configuration file.

Related Information

▼ 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

- "Run the Fabric Configuration Wizard (Toolbox CLI)" on page 22
- "Add a Switch to the Fabric Configuration (Toolbox CLI)" on page 25
- "Remove a Switch From the Fabric Configuration (Toolbox CLI)" on page 26
- "Distribute the Fabric Configuration (Toolbox CLI)" on page 26

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 20
- “Run the Fabric Configuration Wizard (Toolbox CLI)” on page 22
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▼ 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? [0xa000000000000001]:
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': '0xa000000000000001',
              '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 18.

Related Information

- “Start the Toolbox CLI” on page 13
- “`config` Object Commands” on page 93
- “Display the Fabric Configuration File (Toolbox CLI)” on page 20

- "Fabric Configuration Wizard Overview" on page 21
- "Add a Switch to the Fabric Configuration (Toolbox CLI)" on page 25
- "Remove a Switch From the Fabric Configuration (Toolbox CLI)" on page 26
- "Distribute the Fabric Configuration (Toolbox CLI)" on page 26

▼ 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 18.

Related Information

- "Start the Toolbox CLI" on page 13
- "`switch` Object Commands" on page 99
- "Display the Fabric Configuration File (Toolbox CLI)" on page 20
- "Fabric Configuration Wizard Overview" on page 21
- "Run the Fabric Configuration Wizard (Toolbox CLI)" on page 22
- "Remove a Switch From the Fabric Configuration (Toolbox CLI)" on page 26
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▼ 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 18.

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- “Start the Toolbox CLI” on page 13
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▼ 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 18.

Related Information

- “Start the Toolbox CLI” on page 13
- “`config` Object Commands” on page 93
- “Display the Fabric Configuration File (Toolbox CLI)” on page 20
- “Fabric Configuration Wizard Overview” on page 21
- “Run the Fabric Configuration Wizard (Toolbox CLI)” on page 22
- “Add a Switch to the Fabric Configuration (Toolbox CLI)” on page 25
- “Remove a Switch From the Fabric Configuration (Toolbox CLI)” on page 26

Administering Partitions (Toolbox CLI)

These tasks display and manage partitions.

- “Display a Partition (Toolbox CLI)” on page 28
- “Display the Ports of All Partitions (Toolbox CLI)” on page 29
- “Display the Partitions With a Particular Port (Toolbox CLI)” on page 30
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Related Information

- "Performing Basic Toolbox CLI Tasks" on page 12
- "Administering the Fabric Configuration (Toolbox CLI)" on page 20
- "Administering Subnet Managers (Toolbox CLI)" on page 37
- "Administering Switches (Toolbox CLI)" on page 40
- "Administering Hosts (Toolbox CLI)" on page 46
- "Administering Logs (Toolbox CLI)" on page 53

▼ 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 13
- "`partition` Object Commands" on page 96
- "Display the Ports of All Partitions (Toolbox CLI)" on page 29

▼ Display the Ports of All Partitions (Toolbox CLI)

- **In the Toolbox CLI, display all of the ports of all partitions.**

```
[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 13
- “`partition` Object Commands” on page 96
- “Display a Partition (Toolbox CLI)” on page 28
- “Display the Partitions With a Particular Port (Toolbox CLI)” on page 30
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- “Remove a Port From a Partition (Toolbox CLI)” on page 35
- “Remove a Partition (Toolbox CLI)” on page 36

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

- **In the Toolbox CLI, display partition(s) associated 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 13
- “`partition` Object Commands” on page 96
- “Display a Partition (Toolbox CLI)” on page 28
- “Display the Ports of All Partitions (Toolbox CLI)” on page 29
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- “Remove a Partition (Toolbox CLI)” on page 36

▼ Create a Partition (Toolbox CLI)

1. In the Toolbox CLI, create a partition.

```
[toolbox-cli] add partition name=name pkey=P_Key [-defmember=full|liimited|both][-
iboip=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 13
- "`partition` Object Commands" on page 96
- "Display a Partition (Toolbox CLI)" on page 28
- "Display the Ports of All Partitions (Toolbox CLI)" on page 29
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- "Add a Port to a Partition (Toolbox CLI)" on page 33

- “Modify a Port of a Partition (Toolbox CLI)” on page 34
- “Remove a Port From a Partition (Toolbox CLI)” on page 35
- “Remove a Partition (Toolbox CLI)” on page 36

▼ 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|liimited|both][-iboip=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 13
- “`partition` Object Commands” on page 96
- “Display a Partition (Toolbox CLI)” on page 28
- “Display the Ports of All Partitions (Toolbox CLI)” on page 29

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- "Remove a Port From a Partition (Toolbox CLI)" on page 35
- "Remove a Partition (Toolbox CLI)" on page 36

▼ 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=0x002c903000891ac -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 13
- "`partition` Object Commands" on page 96
- "Display a Partition (Toolbox CLI)" on page 28
- "Display the Ports of All Partitions (Toolbox CLI)" on page 29

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- "Remove a Partition (Toolbox CLI)" on page 36

▼ 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 13
- "`partition` Object Commands" on page 96
- "Display a Partition (Toolbox CLI)" on page 28

- "Display the Ports of All Partitions (Toolbox CLI)" on page 29
- "Display the Partitions With a Particular Port (Toolbox CLI)" on page 30
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- "Remove a Partition (Toolbox CLI)" on page 36

▼ 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 13

- "`partition` Object Commands" on page 96
- "Display a Partition (Toolbox CLI)" on page 28
- "Display the Ports of All Partitions (Toolbox CLI)" on page 29
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- "Remove a Partition (Toolbox CLI)" on page 36

▼ 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 13

Administering Subnet Managers (Toolbox CLI)

These tasks display and manage Subnet Managers.

Related Information

▼ 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:                           STAND BY
STATE:                        enabled
PRIORITY:                     4
CONTROLLED_HANDOVER:          TRUE
SUBNET_PREFIX:                0xfe80000000000000
MKEY:                         None
ROUTING_ENGINE:               FatTree

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

Related Information

- “Start the Toolbox CLI” on page 13
- “sm Object Commands” on page 98
- “Enable or Disable a Subnet Manager (Toolbox CLI)” on page 38
- “Configure a Subnet Manager (Toolbox CLI)” on page 39

▼ 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 13
- “sm Object Commands” on page 98
- “Display Subnet Manager Status (Toolbox CLI)” on page 37
- “Configure a Subnet Manager (Toolbox CLI)” on page 39

▼ 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 38.

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 addres 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:                           STAND BY
STATE:                        disabled
PRIORITY:                     3
CONTROLLED_HANDOVER:          FALSE
SUBNET_PREFIX:                0xfe80000000000000
MKEY:                         0xa00000000001
ROUTING_ENGINE:               FatTree

nsn156-81  (10.134.156.81)
--------------------------
SM:                           MASTER
STATE:                        enabled
PRIORITY:                     0
CONTROLLED_HANDOVER:          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 38.

Related Information

- “Start the Toolbox CLI” on page 13
- “`sm` Object Commands” on page 98
- “Display Subnet Manager Status (Toolbox CLI)” on page 37
- “Enable or Disable a Subnet Manager (Toolbox CLI)” on page 38

Administering Switches (Toolbox CLI)

These tasks display and manage switches.

- “Display Switch Information (Toolbox CLI)” on page 41
- “Display Switch Backups (Toolbox CLI)” on page 41
- “Back Up a Switch Configuration (Toolbox CLI)” on page 42
- “Disable a Switch (Toolbox CLI)” on page 43

- “Restore a Switch (Toolbox CLI)” on page 44

Related Information

- “Performing Basic Toolbox CLI Tasks” on page 12
- “Administering the Fabric Configuration (Toolbox CLI)” on page 20
- “Administering Partitions (Toolbox CLI)” on page 27
- “Administering Subnet Managers (Toolbox CLI)” on page 37
- “Administering Hosts (Toolbox CLI)” on page 46
- “Administering Logs (Toolbox CLI)” on page 53

▼ 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 13
- “`switches` Object Command” on page 99
- “Display Switch Backups (Toolbox CLI)” on page 41
- “Back Up a Switch Configuration (Toolbox CLI)” on page 42
- “Disable a Switch (Toolbox CLI)” on page 43
- “Restore a Switch (Toolbox CLI)” on page 44

▼ 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 13
- “backups Object Command” on page 93
- “Display Switch Information (Toolbox CLI)” on page 41
- “Back Up a Switch Configuration (Toolbox CLI)” on page 42
- “Disable a Switch (Toolbox CLI)” on page 43
- “Restore a Switch (Toolbox CLI)” on page 44

▼ 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 13
- “`config` Object Commands” on page 93
- “Display Switch Information (Toolbox CLI)” on page 41
- “Display Switch Backups (Toolbox CLI)” on page 41
- “Disable a Switch (Toolbox CLI)” on page 43
- “Restore a Switch (Toolbox CLI)” on page 44

▼ 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 addres 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 13
- “`config` Object Commands” on page 93
- “Display Switch Information (Toolbox CLI)” on page 41
- “Display Switch Backups (Toolbox CLI)” on page 41
- “Back Up a Switch Configuration (Toolbox CLI)” on page 42
- “Restore a Switch (Toolbox CLI)” on page 44

▼ 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 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 13
- “`config` Object Commands” on page 93
- “Display Switch Information (Toolbox CLI)” on page 41
- “Display Switch Backups (Toolbox CLI)” on page 41
- “Back Up a Switch Configuration (Toolbox CLI)” on page 42
- “Disable a Switch (Toolbox CLI)” on page 43

Administering Hosts (Toolbox CLI)

These tasks display and manage hosts.

Related Information

▼ 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                                                nm2-
box1(3342), Default(7fff)
[toolbox-cli]
```

Related Information

- “Start the Toolbox CLI” on page 13
- “`hosts` Object Commands” on page 95
- “Display All Hosts in the Fabric (Toolbox CLI)” on page 47
- “Display Hosts Visible From a Node (Toolbox CLI)” on page 48
- “Replace a GUID Manually (Toolbox CLI)” on page 49
- “Replace a GUID Automatically (Toolbox CLI)” on page 51

▼ 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 13
- "`hosts` Object Commands" on page 95
- "Display Host Partition Information (Toolbox CLI)" on page 46
- "Display Hosts Visible From a Node (Toolbox CLI)" on page 48
- "Replace a GUID Manually (Toolbox CLI)" on page 49
- "Replace a GUID Automatically (Toolbox CLI)" on page 51

▼ 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 13
- "`hosts` Object Commands" on page 95
- "Display Host Partition Information (Toolbox CLI)" on page 46
- "Display All Hosts in the Fabric (Toolbox CLI)" on page 47
- "Replace a GUID Manually (Toolbox CLI)" on page 49
- "Replace a GUID Automatically (Toolbox CLI)" on page 51

▼ 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 13.

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
0x111111111111111111     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 13
- “`partition` Object Commands” on page 96
- “Display Host Partition Information (Toolbox CLI)” on page 46
- “Display All Hosts in the Fabric (Toolbox CLI)” on page 47
- “Display Hosts Visible From a Node (Toolbox CLI)” on page 48
- “Replace a GUID Automatically (Toolbox CLI)” on page 51

▼ 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 18.

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
 mlx4_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
 mlx4_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 13
- “`settings` Object Commands” on page 97
- “Display Host Partition Information (Toolbox CLI)” on page 46
- “Display All Hosts in the Fabric (Toolbox CLI)” on page 47
- “Display Hosts Visible From a Node (Toolbox CLI)” on page 48
- “Replace a GUID Manually (Toolbox CLI)” on page 49

Administering Logs (Toolbox CLI)

These tasks display and manage logs.

- “Display the Local Port Log (Toolbox CLI)” on page 54
- “Display the Remote Switch Port Log (Toolbox CLI)” on page 54
- “Display the Switch Event Log (Toolbox CLI)” on page 55
- “Configure Email Alerts (Toolbox CLI)” on page 56

Related Information

- “Performing Basic Toolbox CLI Tasks” on page 12
- “Administering the Fabric Configuration (Toolbox CLI)” on page 20
- “Administering Partitions (Toolbox CLI)” on page 27
- “Administering Subnet Managers (Toolbox CLI)” on page 37
- “Administering Switches (Toolbox CLI)” on page 40
- “Administering Hosts (Toolbox CLI)” on page 46

▼ 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                                          LAST TIME SEEN
--------------------     ----     ----------     --------     ------------------     ------------------
   -------     ------------------------------------------------------     --------------------
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 13
- “`log` Object Command” on page 96
- “Display the Remote Switch Port Log (Toolbox CLI)” on page 54
- “Display the Switch Event Log (Toolbox CLI)” on page 55
- “Configure Email Alerts (Toolbox CLI)” on page 56

▼ 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 addres 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 13
- “`log` Object Command” on page 96
- “Display the Local Port Log (Toolbox CLI)” on page 54
- “Display the Switch Event Log (Toolbox CLI)” on page 55
- “Configure Email Alerts (Toolbox CLI)” on page 56

▼ 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 13
- "`log` Object Command" on page 96
- "Display the Local Port Log (Toolbox CLI)" on page 54
- "Display the Remote Switch Port Log (Toolbox CLI)" on page 54
- "Configure Email Alerts (Toolbox CLI)" on page 56

▼ 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 16.

3. **Restart the toolbox daemon.**

   See “Enable or Disable the Toolbox CLI Daemon” on page 18.

Related Information

- “Start the Toolbox CLI” on page 13
- “`settings` Object Commands” on page 97
- “Display the Local Port Log (Toolbox CLI)” on page 54
- “Display the Remote Switch Port Log (Toolbox CLI)” on page 54
- “Display the Switch Event Log (Toolbox CLI)” on page 55

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 Datacenter InfiniBand Switch 36 Firmware Version 2.1*.

Related Information

Understanding Oracle ILOM Targets

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

Related Information

- “Understanding the Oracle ILOM Web Interface” on page 68

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 61
- “Oracle ILOM Client Targets and Properties” on page 62

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*	■ `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 Datacenter InfiniBand Switch 36` ■ `system_component_part_number = 7014378` ■ `system_component_serial_number = AK00059818` ■ `chassis_manufacturer = Sun Microsystems` ■ `chassis_name = Sun Datacenter InfiniBand Switch 36` ■ `chassis_part_number = 7014378` ■ `chassis_serial_number = AK00059818`
`/SP/logs/audit`	`clear = (Cannot show property)`
`/SP/network`	`dhcp_clientid = none`
`/SP/network/ipv6`	■ `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
	■ 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	■ dump_uri = (Cannot show property) ■ load_uri = (Cannot show property) ■ message = (none)
/SP/preferences/banner/login	■ dump_uri = (Cannot show property) ■ load_uri = (Cannot show property) ■ message = (none) ■ message_acceptance = disabled
/SP/preferences/password_policy	■ 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 60
- “Oracle ILOM Client Targets and Properties” on page 62
- “Oracle ILOM Service Targets and Properties” on page 64
- “Oracle ILOM User and Session Targets and Properties” on page 65
- “Oracle ILOM Legacy Targets and Properties” on page 66

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	■ address = 0.0.0.0 ■ binddn = (none) ■ bindpw = (none) ■ defaultrole = Operator

Target and Path	Properties and Default Values
	■ port = 389 ■ searchbase = (none) ■ state = disabled
/SP/clients/ldapssl	■ 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*	■ address = (none) ■ port = 0
/SP/clients/ldapssl/alternateservers/*x*/cert	■ 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	■ 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*	■ name = (none) ■ roles = (none)
/SP/clients/ldapssl/opergroups/*x*	name = (none)
/SP/clients/ldapssl/optionalUserMapping	■ 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 60
- "Oracle ILOM General Targets and Properties" on page 61
- "Oracle ILOM Service Targets and Properties" on page 64
- "Oracle ILOM User and Session Targets and Properties" on page 65
- "Oracle ILOM Legacy Targets and Properties" on page 66

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`	■ `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`	■ `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`	■ `fingerprint = 40:df:2b:04:15:26:e6:9b:fa:e6:b1:a3:e5:93:0f:13` ■ `length = 1024` ■ `privatekey = (Cannot show property)` ■ `publickey = AAAAB3NzaC1kc3MAAACBAPA7583jOLhhN2tPl1jfoCf24yWpd +MySZSMoojXurylgxlRl6pCVvFHmiBPX2DjCyxucotuqM9gcGR0A44aOlJ3ZdO +4ZFCLOVMtMrzJAWjFWlPsIGHxLl6lyuLTYYLx52UBIQL7pO8GaXPKJO1zIiPtTC9+iNMBfH4kQxhTeZvAAAAFQDfWe5Pjda +HibHjZRV5+QnJ0vR/YkA33oa+6GT1H8Gbo4UXldnYgIH3EyVWEG/ OmfuIGPMmTv16rOAOCqERNXsZc9ALMjlwfw+G9r+X3JTLpYZtBcQQAAAAIBk/ KVZRSorsfkHTnueND4WWeTIq/+8WJQ2mzDFS7L5ZtsS6EN8tGThPOyNtuQjstCjCkcNhi +aa3ZGZzuA4aCd0PjGiejSY5pE4hzdNuPYTNoS6gaaqpXKDpih9A1jo4OhLHbuG76dKZmRdbv0GXkPjl9va2bB4MStByRgb9`
`/SP/services/ssh/keys/rsa`	■ `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
	■ publickey = AAAAB3NzaC1yc2EAAAABIwAAAQEAxXTVZSM4LI2weH2TZmP1+zB1ohaxcIgdQFtpOsd4NuIxO2bqoKNHwVbTOnK274yMo55SGht+SN6W9bvT+sjg1VadbhPx/jTnsBoHRCnghMw8H8lRWCZ6IVf8Qqvc4I1fEhw1Mc//pFJ9yxkM1cbbfqvOY/5gmeBREcUhd6XHPWciYr+XvfkMIBgv0TwfzkHYFNtZBYmKMoh1oY6O4cgJvLlySUfh1DcltJJac0X3278+PFpfTxLtCwYmWf0C7Ceh9rLpkE/FQsKpzivzU5C+e3UdcWa5ajsuC4j7kRzoKzgF1yWAnQT3ZtyYf+nwHzFXQ==

Related Information

- “Oracle ILOM Targets and Descriptions” on page 60
- “Oracle ILOM General Targets and Properties” on page 61
- “Oracle ILOM Client Targets and Properties” on page 62
- “Oracle ILOM User and Session Targets and Properties” on page 65
- “Oracle ILOM Legacy Targets and Properties” on page 66

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*	■ `fingerprint = (none)` ■ `algorithm = (none)` ■ `embedded_comment = (none)` ■ `bit_length = (none)` ■ `load_uri = (Cannot show property)` ■ `clear_action = (Cannot show property)`

Related Information

- “Oracle ILOM Targets and Descriptions” on page 60
- “Oracle ILOM General Targets and Properties” on page 61
- “Oracle ILOM Client Targets and Properties” on page 62
- “Oracle ILOM Service Targets and Properties” on page 64

- “Oracle ILOM Legacy Targets and Properties” on page 66

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`	■ `fault_state = OK` ■ `clear_fault_action = (none)`
`/SYS/LINKDISABLE_ATTN`	■ `type = OEM` ■ `ipmi_name = LINKDISABLE_ATTN` ■ `class = Discrete Sensor` ■ `value = State Deasserted` ■ `alarm_status = cleared`
`/SYS/MB`	`fru_serial_number = 465769T+1234R601F3`
`/SYS/MB/T_BACK`	■ `upper_nonrecov_threshold = 65.000 degree C` ■ `upper_critical_threshold = 60.000 degree C`
`/SYS/MB/T_FRONT`	■ `upper_nonrecov_threshold = 65.000 degree C` ■ `upper_critical_threshold = 60.000 degree C`
`/SYS/MB/T_I4A`	■ `upper_nonrecov_threshold = 95.000 degree C` ■ `upper_critical_threshold = 90.000 degree C`
`/SYS/MB/T_SP`	■ `upper_nonrecov_threshold = 85.000 degree C` ■ `upper_critical_threshold = 80.000 degree C`

Related Information

- “Oracle ILOM Targets and Descriptions” on page 60
- “Oracle ILOM General Targets and Properties” on page 61
- “Oracle ILOM Client Targets and Properties” on page 62
- “Oracle ILOM Service Targets and Properties” on page 64
- “Oracle ILOM User and Session Targets and Properties” on page 65

▼ Switch From the Oracle ILOM Shell to the Linux Shell

1. **Acces 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@switch_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@switch_name->
```

where *switch_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/Fabric_Mgmt` Linux shell as the `ilom-operator` user, this message is displayed.

```
-> start /SYS/Fabric_Mgmt
Are you sure you want to start /SYS/Fabric_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` 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 68
- "Oracle ILOM Web Interface Translation" on page 70

Related Information

- "Understanding Oracle ILOM Targets" on page 59
- "Switch From the Oracle ILOM Shell to the Linux Shell" on page 66

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 switch and SP firmware version information.
	Components	Displays component information and clear fault status.
	Sensors	Displays sensor values.
	Indicators	Displays and sets switch status LED state.
Switch/Fabric Monitoring Tools	SUN DCS GW Monitor	Enters the Fabric Monitor interactive GUI.
Oracle ILOM Administration	Identification	Displays and sets switch identification information.
	Logs	Tabs for: ■ **Event** – Displays and clears event log. ■ **Audit** – Displays and clears audit log.
	Management Access	Tabs for:

Navigation Pane Heading	Subheading	Description
		■ **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: ■ **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: ■ **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.
	Fault Management	Displays information about faulted components.
	Notifications	Tabs for: ■ **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: ■ **Clock** – Displays and sets date, time, and time server parameters. ■ **Timezone** – Displays and sets time zone.
	Maintenance	Tabs for: ■ **Firmware Update** – Enables firmware upgrade. ■ **Reset SP** – Resets the management controller. ■ **Snapshot** – Enables a snapshot of the switch state.
Site Map		Links to all Oracle ILOM web pages on one page.

Related Information

- “Oracle ILOM Web Interface Translation” on page 70

Oracle ILOM Web Interface Translation

The *Sun Datacenter InfiniBand Switch 36 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
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

Goal to Achieve	Menu Selections
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 68

Supplementing the Service Manual

These topics provide information supplementing or superseding that found in the *Sun Datacenter InfiniBand Switch 36 Service Manual for Firmware Version 2.1*.

Related Information

- "Supplementing the Installation Guide" on page 9
- "Supplementing the Administration Guide" on page 11
- "Supplementing the Oracle ILOM Document" on page 59
- "Supplementing the Command Reference" on page 75

Battery Service Sequence

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

Step	Description	Links
1.	Determine if the battery is faulty.	"Determine If the Battery is Faulty" on page 77
2.	Power off both power supplies.	"Power Off a Power Supply" on page 48 **Note -** Do not remove the InfiniBand cables until the switch is powered off.
3.	Remove all IB cables.	"Remove an InfiniBand Cable" on page 70
4.	Remove the switch from the rack.	"Remove the Switch From the Rack" on page 79
5.	Replace the battery.	"Replace the Battery" on page 80
6.	Install the switch in the rack.	*Switch Installation*, installing the switch **Note -** Do not power on the switch.
7.	Install all IB cables.	"Install an InfiniBand Cable" on page 74

Step	Description	Links
8.	Power on both power supplies.	“Power On a Power Supply” on page 53
9.	(Optional) Set the time and date.	*Switch Administration*, setting the date and time

Supplementing the Command Reference

These topics provide information supplementing or superseding that found in the *Sun Datacenter InfiniBand Switch 36 Command Reference for Firmware Version 2.1*.

Related Information

- "Supplementing the Installation Guide" on page 9
- "Supplementing the Administration Guide" on page 11
- "Supplementing the Oracle ILOM Document" on page 59
- "Supplementing the Service Manual" on page 73

Understanding Hardware Commands

This command reference information supplements or supersedes information currently provided in the *Sun Datacenter InfiniBand Switch 36 Command Reference for Firmware Version 2.1* and *Sun Datacenter InfiniBand Switch 36 Administration Guide for Firmware Version 2.1*.

Related Information

- "Understanding Toolbox CLI Commands" on page 91

`env_test` Command

Displays environmental status.

Syntax

```
env_test
```

Description

This hardware command performs a series of hardware and environmental tests of the switch. 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` 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 switch with the `env_test` command.

```
FabMan@switch_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 = 3.40 V
Measured 12V = 11.97 V
Measured 5V = 5.04 V
Measured VBAT = 3.04 V
Measured 2.5V = 2.48 V
Measured 1.8V = 1.78 V
Measured I4 1.2V = 1.22 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 22
Front temperature 22
SP temperature 50
Switch temperature 35, maxtemperature 38
Temperature test returned OK
Starting FAN test:
Fan 0 not present
Fan 1 running at rpm 12099
Fan 2 running at rpm 11663
Fan 3 running at rpm 11881
Fan 4 not present
FAN test returned OK
Starting Connector test:
Connector test returned OK
Starting Onboard ibdevice test:
Switch 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@switch_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.

During an in-depth check, 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` 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@switch_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: SUN_NM2-36p_005 OK
  Verifying image integrity OK

FabMan@switch_name->
```

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

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

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

Verifying installed files:
```

```
.................................................................. FAILED
* Package nm2-phs-2.2.2-6.i386:
S.5....T   /etc/init.d/dcs
.
.
.
FabMan@switch_name->
```

In this example, within the `nm2-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

`smpartition` Command

Manages the partition configuration.

Syntax

`smpartition` *subcommand* `[-h]`

This hardware command has subcommands that determine its functionality.

Subcommand Syntax	Description
`peerversion`	Displays the firmware version of `smnode` peers of the master Subnet Manager.
`start [tid]`	Initiates a new configuration based upon a currently used configuration.
`create [tid` *tid*`][-n` *partition_name*`] -pkey` *P_Key* `[use_grh][-m` *defmember*`] [-flag [ipoib [mtu` *mtu*`][rate` *rate*`][sl` *sl*`][scope` *scope*`]]]`	Creates a new partition. The `-m` option configures the default membership for the partition.
`delete [tid` *tid*`] -n` *partition_name*`|-pkey` *P_Key*	Deletes a partition.
`add [tid` *tid*`] -n` *partition_name*`|-pkey` *P_Key* `-port` *port* `|ALL_CAS| ALL_SWITCHES|ALL_ROUTERS [-m` *member*`]`	Adds one or more ports to the partition. The `-m` option sets the membership for the ports.
`remove [tid` *tid*`] -n` *partition_name*`|-pkey` *P_Key* `-port` *port* `|ALL_CAS| ALL_SWITCHES|ALL_ROUTERS`	Removes one or more ports to the partition.

Subcommand Syntax	Description
`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*`]]`	Modifies a partition flag or port membership. The `-m` option sets the membership for the ports.
`list active|modified [no-page]`	Displays the active or modified configuration. By default, the output is displayed one page at a time, advanced by pressing the spacebar. The `no-page` option enables a continuous stream of output without page breaks.
`listcurrenttid`	Lists the current transaction ID.
`commit [tid` *tid*`]`	Commits the modified configuration to become the active configuration.
`abort [tid` *tid*`]`	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`).

mtu 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`).

rate 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
`tid`	Specifies the transaction ID. The transaction ID adds an additional layer of security to the `smpartition` command. The identifier is a 32-bit unsigned integer, returned when the partition configuration session is started with the `smpartition start tid` 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.
`-n`	Specifies the partition name.
`-pkey`	Specifies the partition key.
`use_grh`	If the `use_grh` option is used in the `smpartition create` 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.
`-m`	Specifies the membership type. If the `-m` option is used in the `smpartition create` command, the default membership type of the partition is specified. If the `-m` option is used with the `smpartition add` command or `smpartition modify` 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.
`-port`	Specifies the port or ports to be acted upon: ■ *port* – The GUID of the port to be acted upon. Alternatively, one these special parameters is specified instead of a GUID: ■ `ALL_CAS` – All CAs in the IB fabric. ■ `ALL_SWITCHES` – All switches. ■ `ALL_ROUTERS` – All routers.
`-flag`	Specifies: ■ `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. **Note -** The `-flag` option by itself disables IPoIB. If you use the `-flag` option in the `smpartition modify` command, you must restart the master Subnet Manager or perform a Subnet Manager handover after the `smpartition commit` 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.
`-h`	Provides help.

Example

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

```
FabMan@switch_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@switch_name->
```

Related Information

- *Switch Administration*, partitioning the IB fabric
- `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
`start [-force][-addonly|-deleteonly] [-override-inconsistent-partition-configurations][-override-unavailable-smnodes][tid]`	Initiates a new configuration based upon a currently used configuration. Use the `-force` option or `-override-unavailable-smnodes` option to bypass the partition daemon check. See "Options" on page 89.
`list active|modified`	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.
`listlocalmkey`	Displays the current local M_Key for an I4 switch chip without a corresponding Subnet Manager and its status.
`listcurrenttid`	Lists the current transaction ID.
`setlocalsecretmkey` *M_Key*	Sets the secret M_Key locally for an I4 switch chip without a corresponding Subnet Manager.
`clearlocalmkey`	Clears the local secret M_Key.
`add` *M_Key* `[tid` *tid*`]`	Adds an M_Key to the configuration.
`delete` *M_Key* `[tid` *tid*`]`	Deletes an M_Key from the configuration.
`undo` [`tid` *tid*]	Reverts the previous `add`, `delete`, or `set-current` operation.
`set-current` *M_Key* `[tid` *tid*`]`	Sets the current M_Key.
`commit [-force][-override-inconsistent-partition-configurations][-override-unavailable-smnodes][tid` *tid*`]`	Commits the modified configuration to become the active configuration. Use the `-force` option or `-override-unavailable-smnodes` option to bypass the partition daemon check. See "Options" on page 89.
`abort` [`tid` *tid*]	Abruptly ends the configuration session. All modified configuration information is lost, and the active configuration remains unchanged.
`setreplicationpassword` *password* `[tid` *tid*`]`	Configures the replication (and encryption) password.
`enablesecretmkey [-force][-override-inconsistent-partition-configurations] [-override-unavailable-smnodes]`	Enables secret M_Key functionality. Use the `-force` option or `-override-unavailable-smnodes` option to bypass the partition daemon check. See "Options" on page 89.
`disablesecretmkey [-force][-override-inconsistent-partition-configurations] [-override-unavailable-smnodes]`	Disables secret M_Key functionality. Use the `-force` option or `-override-unavailable-smnodes` option to bypass the partition daemon check. See "Options" on page 89.

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.	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”. 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. Both situations are unsupported.
Downgrading firmware after secret M_Key has been enabled.	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. If you downgrade any other Subnet Manager to firmware 2.0 or lower, the situation becomes as in the first scenario. 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.
Upgrading from a lower firmware version.	Do not enable secret M_Key until all Subnet Managers in the fabric are at firmware version 2.1 or higher.
Introducing a new Subnet Manager with firmware 2.1 or higher, yet no secret M_Key policy, into a secret M_Key fabric.	Before introducing the new Subnet Manager to the fabric: 1. Disable the new Subnet Manager. 2. Set the new Subnet Manager priority to the lowest. 3. Update the `smnodes` file with the `smnodes` command. 4. Enable the new Subnet Manager. After introducing the new Subnet Manager to the fabric: 1. Update the fabric configuration with the `fdconfig` command. 2. Update the fabric mapping with the `createfabric` command. 3. Perform a `smpartition start`, then `smpartition commit`, then `smsubnetprotection start`, and finally, `smsubnetprotection commit` from the master Subnet Manager 4. Return the priority of the new Subnet Manager to its previous value.
Secret M_Key values are mismatched.	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. Before introducing the new Subnet Manager to the fabric: 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 `smsubnetprotection add` 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.

Scenario	Impact and Actions
	5. Update the `smnodes` file with the `smnodes` command. 6. Enable the new Subnet Manager. After introducing the new Subnet Manager to the fabric: 1. Update the fabric configuration with the `fdconfig` command. 2. Update the fabric mapping with the `createfabric` command. 3. Perform a `smpartition start`, then `smpartition commit`, then `smsubnetprotection start`, and finally, `smsubnetprotection commit` 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.	If each subnet is configured with different secret M_Key policies, then the subnets will not "see" each other and will act independently. If one subnet is without a secret M_Key policy, then the subnet with a secret M_Key policy controls the subnet without. If each subnet is configured with identical secret M_Key policies, they merge into a single subnet. Before physically merging the subnets: 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 `smpartition` 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 `smsubnetprotection add` command. 4. Do not change the current secret M_Key. After physically merging the subnets: 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`	The attribute of the M_Key:

Column Heading	Description
	■ `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.
`-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@switch_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@switch_name->
```

Related Information

- *Switch 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 91.

Example

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

```
FabMan@switch_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@switch_name->
```

Related Information

- “Understanding Toolbox CLI Commands” on page 91

Understanding Toolbox CLI Commands

These topics describe the TOOLBOX CLI commands.

Related Information

- "Understanding the Toolbox CLI" on page 11
- "Understanding Hardware Commands" on page 75

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 90

- “Understanding the Toolbox CLI” on page 11

`api-key` Object Command

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

Related Information

- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`backups` Object Command

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

Related Information

- “Display Switch Backups (Toolbox CLI)” on page 41
- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`config` Object Commands

Description	Syntax
Back up switch configuration	`set config backup switch=`*name*`|all`
Disable the switch configuration.	`set config disable switch=`*name* `new_mkey=`*M_Key*
Display the fabric configuration file.	`show config`
Distribute the fabric configuration on this switch to another switch.	`set config copy [ip=`*peer_IP_address*`|name=`*peer_hostname*`|all]`

Description	Syntax
Restore the switch configuration from backup.	`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*`} [state=`*sm_state*`]`
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 20
- "Run the Fabric Configuration Wizard (Toolbox CLI)" on page 22
- "Distribute the Fabric Configuration (Toolbox CLI)" on page 26
- "Back Up a Switch Configuration (Toolbox CLI)" on page 42
- "Disable a Switch (Toolbox CLI)" on page 43
- "Restore a Switch (Toolbox CLI)" on page 44
- "Toolbox CLI Command Construct" on page 92
- "`toolbox` Command" on page 90

`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 18
- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`hosts` Object Commands

Description	Syntax
Display the IB hosts.	`show hosts`
Display the IB hosts in a partition.	`show hosts pname=`*partition_name*`|pkey=`*P_Key*
Display the IB hosts in the fabric.	`show hosts fabric`
Display the IB hosts visible to a node or GUID.	`show hosts visible-from nodedesc=`*node_description*`| nodeguid=`*node_guid*`|portguid=`*port_guid*

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 46
- “Display All Hosts in the Fabric (Toolbox CLI)” on page 47
- “Display Hosts Visible From a Node (Toolbox CLI)” on page 48
- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`log` Object Command

Description	Syntax
Display the local port log.	`show log ports local=True`
Display the remote switch log.	`show log ports local=False ip=`*IP_address*`|switch=`*name*
Display the switch event log.	`show log sm [event=backup|disable|replace]`

Related Information

- “Display the Local Port Log (Toolbox CLI)” on page 54
- “Display the Remote Switch Port Log (Toolbox CLI)” on page 54
- “Display the Switch Event Log (Toolbox CLI)” on page 55
- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`mkey` Object Command

Description	Syntax
Display the M_Key	`show mkey`

Related Information

- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`partition` Object Commands

Description	Syntax
Add a port to a partition.	`set partition name=`*partition_name*`|pkey=`*P_Key* `add port portguid=`*GUID* `-m=(full|limited|both)`
Create a partition.	`add partition name=`*partition_name* `pkey=`*P_Key* `[[-defmember|-ipoib|-mtu|-rate|-sl|-scope]=`*val*`]`

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

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 28
- “Create a Partition (Toolbox CLI)” on page 31
- “Add a Port to a Partition (Toolbox CLI)” on page 33
- “Modify a Partition (Toolbox CLI)” on page 32
- “Remove a Partition (Toolbox CLI)” on page 36
- “Replace a GUID Manually (Toolbox CLI)” on page 49
- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`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.	`show settings [`*property*`]`
Set a value to a Toolbox CLI configuration property.	`set settings` *property*`=`*value*

where:

- *property* is the property to act upon. See "Toolbox CLI Settings Properties" on page 16.
- *value* is the value to be assigned to the *property*.

Related Information

- "Display the Toolbox CLI Settings" on page 14
- "Modify the Toolbox CLI Settings" on page 15
- "Toolbox CLI Settings Properties" on page 16
- "Toolbox CLI Command Construct" on page 92
- "`toolbox` Command" on page 90

`sm` Object Commands

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

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 37
- "Enable or Disable a Subnet Manager (Toolbox CLI)" on page 38

- “Configure a Subnet Manager (Toolbox CLI)” on page 39
- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`switch` Object Commands

Description	Syntax
Add a switch to the fabric configuration file.	`add switch name=`*hostname* `ip=`*mgmt_eth_ip* `rack=`*rack_name* `fabric=`*fabric_name* `sm=enabled|disabled`
Remove a switch from the fabric configuration file.	`remove switch name=`*hostname*`|ip=`*mgmt_eth_ip*

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 25
- “Remove a Switch From the Fabric Configuration (Toolbox CLI)” on page 26
- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`switches` Object Command

Description	Syntax
Display all IB switches	`show switches`

Related Information

- “Display Switch Information (Toolbox CLI)” on page 41

- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

`version` Object Command

Description	Syntax
Display the Toolbox CLI version.	`show version`

Related Information

- “Display the Toolbox CLI Version” on page 14
- “Toolbox CLI Command Construct” on page 92
- “`toolbox` Command” on page 90

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