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CLI Reference Guide

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Preface

As part of an effort to improve its product lines, EMC periodically releases revisions of its software and hardware. Therefore, some functions described in this document might not be supported by all versions of the software or hardware currently in use. The product release notes provide the most up-to-date information on product features.

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The release notes for your version includes the latest information for your product.

The following EMC publication sets provide information about your ScaleIO or ScaleIO Ready Node product:

- ScaleIO software (downloadable as ScaleIO Software <version> Documentation set)
- ScaleIO Ready Node with AMS (downloadable as ScaleIO Ready Node with AMS Documentation set)
- ScaleIO Ready Node no AMS (downloadable as ScaleIO Ready Node no AMS Documentation set)
- VxRack Node 100 Series (downloadable as VxRack Node 100 Series Documentation set)

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EMC uses the following type style conventions in this document:

Bold	Used for names of interface elements, such as names of windows, dialog boxes, buttons, fields, tab names, key names, and menu paths (what the user specifically selects or clicks)
<i>Italic</i>	Used for full titles of publications referenced in text
<code>Monospace</code>	Used for: <ul style="list-style-type: none">• System code• System output, such as an error message or script• Pathnames, filenames, prompts, and syntax• Commands and options
<i>Monospace italic</i>	Used for variables
<code>Monospace bold</code>	Used for user input
[]	Square brackets enclose optional values

	Vertical bar indicates alternate selections - the bar means “or”
{ }	Braces enclose content that the user must specify, such as x or y or z
...	Ellipses indicate nonessential information omitted from the example

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CHAPTER 1

SCLI Basics

The following topics explain the basic concepts of using the ScaleIO CLI (SCLI).

• Accessing SCLI	14
• Command format	14
• Syntax	15
• Using SCLI in non-secure mode	16
• Logging in	17
• Getting help	19

Accessing SCLI

ScaleIO CLI (SCLI) is installed as part of the MDM component. It can be found in the following path:

Operating System	Path
Linux	scli
VMware	scli
Windows	C:\Program Files\emc\scaleio\MDM\bin
Xen	siocli

Before using most SCLI commands, you must log in, using the command:

```
scli --login --username <username> --password <password>
```

Command format

All SCLI commands use the following format:

Operating system	Command format
Linux	scli [--mdm_ip <IP>] --<cmd_name>
VMware	scli [--mdm_ip <IP>] --<cmd_name>
Windows	scli [--mdm_ip <IP>] --<cmd_name>
Xen	siocli [--mdm_ip <IP>] --<cmd_name>

where:

- `--mdm_ip <IP>`

Is one or more IP addresses of the servers running the Master MDM and Slave. In a non-clustered environment, use the MDM IP address.

If the CLI does not reside on the MDM, the `--mdm_ip` parameter must be added to every CLI command.

- `--<cmd_name>`

Is the command to be executed.

Example:

```
scli --mdm_ip 10.10.10.3,10.10.10.4 --query_all
```

Additional rules:

- All parameters are preceded by `--`
- The order of the parameters in the command is insignificant.
- SCLI commands are lowercase and case-sensitive.

--mdm_ip

The `mdm_ip` parameter indicates the MDM designated to receive and execute the command. If the command is run from the Master MDM, this switch may be omitted. For example: `scli --query_all`

To avoid using the `--mdm_ip` parameter in every command, or avoid having to install the CLI on other servers, use SSH or RDM to log in to the shell running on the management server.

You cannot execute SCLI commands on the Slave MDM. However, you can send a command from the Slave MDM by adding the `--mdm_ip` parameter with the Master MDM IP address to the command.

Syntax

SCLI syntax follows these rules:

Format

The text formatted as follows is text that is mandatory in the command: `scli --cmd_name`

Parentheses () indicate a group of required parameters, from which you must choose one.

Angle brackets <> indicate an argument.

Braces { } indicate a series of options for parameter values, from which you must choose one.

A “pipe” | is used to separate items in a series of options (parameters or parameter values). Select one of them.

Square brackets [] indicate an optional parameter.

Usage

Each command entry uses the above syntax and looks like the following example:

```
scli --cmd_example --r1 (--r2 | --r3 <V1>) [o1 <V2> | o2 {--so1
<V3> | --so2 }] [Options]
```

Parameter description**--r1**

The `r1` parameter description

--r2

The `r2` parameter description

--r3<V1>

The `r3` parameter description with possible <V1> input values

--o1<V2>

The `o1` description with possible <V2> input values

--o2 {--so1 <V3> | --so2 }

The `o2` description

[Options]

Additional optional parameters:

so1 <V3>

The `so1` description with possible `V3` input values

so2

The `so2` description

Interpretation

- The text `scli --cmd_example r1` is mandatory. In commands that have no parameters, just `scli --cmd_example` is necessary.
- `(--r2 | --r3 <V1>)` indicates that you must choose one of the options separated by “|”. Selecting an option is REQUIRED, as indicated by “()”.
- `[o1 <V2>| o2 {--so1 <V3> | --so2}]` indicates that you may choose one of the options separated by “|”. Selecting one of these options is OPTIONAL, as indicated by “[]”.
- `[Options]` indicates that you may choose from the following additional parameters. It is OPTIONAL, as indicated by “[]”.

Object names

Define object names according to the following rules:

1. Contains fewer than 32 characters
2. Contains only alphanumeric and punctuation characters
3. Is unique within the object type

ScaleIO objects are assigned a unique ID that can be used to identify the object in CLI commands. You can retrieve the ID via a query or through the object’s property sheet in the GUI.

It is commended that you give each object a meaningful name associated with its operational role.

Note

Because the system is a single object, its name is automatically unique.

Using SCLI in non-secure mode

If ScaleIO is running in non-secure mode, you must disable secure communications on every MDM server to enable execution of commands.

- To disable secure communications in Windows, on each MDM open the SCLI `conf.txt` file, and add the following line:

```
cli_use_secure_communication=0
```

- To disable secure communications in Linux, run the following on each MDM:

```
echo cli_use_secure_communication=0 >> ~/.scli/conf.txt
```

Note

For more information on how to set up secure or non-secure mode, see the *ScaleIO User Guide*.

Logging in

To access the CLI, you must first log in to the management system using a terminal application.

If the CLI and the MDM do not reside on the same server, add the `--mdm_ip` parameter to all CLI commands.

In a non-clustered environment, use the MDM IP address. In a clustered environment, use the IP addresses of the master and slave MDMs, separated by a comma. For example:

```
scli --mdm_ip 10.10.10.3,10.10.10.4 --login --username supervisor1
--password password1
```

You will be prompted to enter the password.

When using LDAP, include the LDAP domain in the command. For example:

```
scli --mdm_ip 10.10.10.3,10.10.10.4 --login --username
JohnDoe@ldap.acme.com --password password1 --ldap_authentication
```

The default user created during setup is the SuperUser, with the *admin* username.

login

Log the specified user into the management system. Every user must log in before performing CLI commands.

When a user is authenticated by the system, all commands will be executed with the respective role until a logout is performed, or until the session expires, by reaching one of the following timeouts:

- Maximum session length (default: 8 hours)
- Session idle time (default: 10 minutes)

Syntax

```
scli --login --username <NAME>
[--password <PASSWORD>]
[--ldap_authentication | --native_authentication]
[--approve_certificate]
--accept_banner_by_scripts_only
```

Note

Actual command syntax is operating-system dependent.

Parameters**--username**

Username

--password

User password. If you do not type your password, you will be prompted to do so.

Note

In Linux, to prevent the password from being recorded in the history log, leave out the `password` flag and enter the password interactively.

--ldap_authentication

Log in using the LDAP authentication method. LDAP authentication parameters should be configured and LDAP authentication method should be set.

--native_authentication

Log in using the native authentication method (default).

--approve_certificate

Preemptive approval of the MDM certificate

--accept_banner_by_scripts_only

Preemptive approval of login banner

Examples

```
scli --login --username siouser1 --password 1!2@3A
```

Note

During installation using the installation manager or the VMware plug-in, the password for the admin user is reset, and you should log in with the new password. If you installed ScaleIO manually, after logging in the first time with the default password (`admin`), you must change the password and log in again. Once that is accomplished, the admin user can create additional users.

When logging in, if a login banner has been configured and enabled in your system, you are prompted to press any key, after which the banner is displayed. To continue, enter "q" to quit the login banner, and then enter "y" to approve the banner.

logout

Log the current user out of the system.

Syntax

```
scli --logout
```

Example

```
scli --logout
```

Getting help

The ScaleIO CLI supports auto-completion. To complete a command or parameters, press the Tab key while typing CLI commands.

Note

In Windows, ScaleIO does not support auto-completion.

Alternately, you can run the `help` command.

help

Display help for the CLI commands.

Syntax

```
scli --help
[--mdm]
[--sds]
[--vol]
[--sdc]
[--general]
[--all]
[--user]
```

Note

To view all help options, run the command without any additional options:

```
scli --help
```

Options

--mdm

Displays help for MDM commands

--sds

Displays help for SDS commands

--vol

Displays help for volume commands

--sdc

Displays help for SDC commands

--general

Displays help for general commands

--all

Displays help for all commands

--user

Displays help for commands related to user management

Example

```
scli --help --mdm
```

CHAPTER 2

Device Commands

This section contains commands for managing devices.

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• rename_device	32
• set_sds_device_led	33
• start_device_test	34
• update_device_original_path	35

abort_remove_sds_device

Stop the process of removing an SDS device from an SDS. If it is performed at too late a stage in the removal process, the command may fail and the device will be removed.

Syntax

```
scli --abort_remove_sds_device (--device_id <ID> ((--sds_id <ID> |
sds_name <NAME>| sds_ip [sds_port <PORT>]) (device_name <NAME> |
device_path <PATH>)))
```

Parameters

--device_id <ID>

The ID of the storage device that was requested to be removed from the SDS

--sds_id <ID>

The ID of the SDS from which the device was to be removed

--sds_name <NAME>

The name of the SDS from which the device was to be removed

--sds_ip <IP>

The IP address of the SDS from which the device was to be removed

--sds_port <PORT>

The port associated with the SDS

--device_name <NAME>

The name of the storage device or file that was requested to be removed from the SDS

--device_path <PATH>

The path of the device that was requested to be removed

Example

```
scli --abort_remove_sds_device --sds_ip 192.168.1.6 --
device_name /dev/sdb
```

activate_sds_device

Activate SDS devices that have completed their tests.

SDS devices that were added using the `add_sds` or `add_sds_device` command with the `test_only` parameter are not used by the system until activated by this command.

Note

You can activate one or all SDS devices on an SDS with a single command.

Syntax

```
scli --activate_sds_device (--sds_id <ID> |
--sds_name <NAME>| --sds_ip <IP> [--sds_port <PORT>]) (--device_id
<ID> | --device_name <NAME> | --device_path <PATH> | --
activate_all_devices)
```

Parameters

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port associated with the SDS

--device_id <ID>

ID of the SDS device to activate

--device_name <NAME>

Storage device name or file name

--device_path <PATH>

Path of the SDS device to activate

--activate_all_devices

Activate all of the specified SDS's devices. If all the devices cannot be activated, this command will fail.

Example

```
scli --mdm_ip 192.168.1.200 --activate_sds_device
--sds_ip 192.168.1.5 --activate_all_devices
```

add_sds_device

Add a storage device to an SDS.

WARNING

During execution of the command, ScaleIO checks that the device is clear before adding it. If the device is not clear, an error message is returned, and the command fails for that device. If you would like to overwrite existing data on the device by forcing the command, use the `force_device_takeover` flag. Note that this flag destroys all existing data on the device!

Note

To use the replication feature via RecoverPoint, ensure that zero padding is enabled on the Storage Pool to be replicated before you add any devices to it. Replication support is version-specific. For more information, see the EMC Simple Support Matrix.

By default, the command also performs performance tests on the added device, and saves the results. Until the test is complete, the device capacity cannot be used. The SDS will perform two performance tests on the given devices: random writes and random reads. When the tests are complete, the device capacity is automatically added to the Storage Pool storage used by the MDM. To modify this behavior, specify one of the test option parameters.

Syntax

```
scli --add_sds_device (--sds_id <ID> | --sds_name <NAME> | --sds_ip
<IP> [--sds_port <PORT>]) --device_path <PATH> [--device_name
<NAME>] (--storage_pool_name <NAME>) | --storage_pool_id <ID>)
[--force_device_takeover]
[--test_time <TIME>]
[--test_only | --no_test]
```

Parameters

--sds_id <ID>

ID of the SDS

--sds_name <NAME>

Name of the SDS

--sds_ip <IP>

SDS IP address

-sds_port <PORT>

Port associated with the SDS

--device_path <PATH>

Full path of the device to be added. A device can be a disk, an unmounted partition, or a file that represents free space on a mounted device.

--device_name <NAME>

Name to assign to the device

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

--force_device_takeover

Add the device, ignoring data from other SDSs on the device.

⚠ WARNING

Use this flag with caution, because all data on the device will be destroyed.

--test_time <TIME>

The maximum test run-time in seconds. Default: 10. The test will stop when it reaches either this limit, or the time it takes to complete 128 MB of data read/write, whichever is first. When `no_test` is selected, this switch is ignored.

Test options (choose one):

By default, ScaleIO tests the performance of the device being added before its capacity can be used, and saves the results. Two tests are performed: random writes and random reads. When the tests are complete, the device capacity is added automatically to the Storage Pool used by the MDM. To modify this behavior, specify one of the test options:

--test_only

Devices will be tested, but not used. To start using their capacity, run the `--activate_sds_device` command.

--no_test

The device capacity will be used without any device testing.

Example

```
scli --mdm_ip 192.168.1.200 --add_sds_device --sds_ip 192.168.1.6 --
device_path /dev/sdb --device_name sd02
```

SDS device names

Assigning each SDS device a meaningful name facilitates future object identification, because the defined name remains constant even if the path changes. When a name has not been defined, the system may display default system-defined names that use the SDS's first IP address.

Each name should conform to the following rules:

1. Contains fewer than 32 characters
2. Contains only alphanumeric and punctuation characters
3. Is unique within the object type

Note

ScaleIO objects are assigned a unique ID that can be used to identify the object in CLI commands. You can retrieve the ID via a query or through the object's property sheet in the GUI.

clear_sds_device_error

Clear an SDS device error.

Note

The command does not check whether the device error was fixed. If the error persists, the device will return to an error state as soon as it is accessed. You can verify that the device error has been fixed by running an SDS query.

Syntax

```
scli --clear_sds_device_error (--sds_id <ID> | --sds_name <NAME> |
--sds_ip <IP> [--sds_port <PORT>]) (--device_id <ID> | --
device_name <NAME> | --device_path <PATH> | --clear_all)
```

Parameters

- sds_id <ID>**
SDS ID
- sds_name <NAME>**
SDS name
- sds_ip <IP>**
SDS IP address
- sds_port <PORT>**
Port associated with the SDS
- device_id <ID>**
ID of the device
- device_name <NAME>**
Storage device name or file name
- device_path <PATH>**
Path of the device
- clear_all**
Clear errors on all SDS devices.

Example (single device)

```
scli --mdm_ip 192.168.1.200 --clear_sds_device_error
--device_name /dev/sdb --sds_ip 192.168.1.7
```

Example (all devices)

```
scli --mdm_ip 192.168.1.200 --clear_sds_device_error
--clear_all --sds_ip 192.168.1.7
```

modify_sds_device_capacity

Modify the amount of an SDS device's storage capacity that is made available to ScaleIO.

Use this command to reduce (or increase) the device capacity that is available to ScaleIO, in order to assist in balancing storage, without affecting the physical disk size. Ensure that the modified capacity is less than the total physical size of the device. If you reduce capacity, data will be moved to other devices in an asynchronous fashion.

When reducing capacity, the excess device capacity is not accessible to the user.

Syntax

```
scli --modify_sds_device_capacity (--device_id <ID> | ((--sds_id
<ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) (--
device_name <NAME> | --device_path <PATH>)) --size_gb <SIZE>
```

Parameters

--device_id <ID>

ID of the SDS device

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port associated with the SDS

--device_name <NAME>

SDS storage device name or file

--device_path <PATH>

Path of the device whose capacity is to be modified

--size_gb <SIZE>

Size in GB of the device to use. The size must be within the device size limits and slightly less than the full device size.

Example

```
scli --mdm_ip 192.168.1.200 --modify_sds_device_capacity --sds_ip
192.168.1.6 --device_name /dev/sdb --size_gb 150
```

query_all_device_latency_meters

Retrieve device latency meters for all the devices, or for devices in the specified Protection Domain.

Note

To query the devices in a specific SDS, use the `query_device_latency_meters` command.

Syntax

```
scli --query_all_device_latency_meters
[ (--protection_domain_id <ID> | --protection_domain_name <NAME> ) ]
```

Note

If the background device scanner is enabled, several device read statistics are dramatically affected.

Parameters

`--protection_domain_id <ID>`

Protection Domain ID

`--protection_domain_name <NAME>`

Protection Domain name

Example

```
scli --query_all_device_latency_meters --protection_domain_name pd10
```

query_device_latency_meters

Retrieve the latency meters for all the devices of the specified SDS.

The SDS maintains statistics about reads and writes to its devices. This command returns the average I/O size and latency for both reads and writes.

Note

To query all devices in the system, or all devices in a specific Protection Domain, use the `query_all_device_latency_meters` command.

Syntax

```
scli --query_device_latency_meters (--sds_id <ID> | --sds_name
<NAME> | --sds_ip <IP> [--sds_port <PORT>])
```

Parameters

`--sds_id <ID>`

```

    SDS ID

--sds_name <NAME>
    SDS name

--sds_ip <IP>
    SDS IP address

--sds_port <PORT>
    Port associated with the SDS

```

Note

If the background device scanner is enabled, several device read statistics are dramatically affected.

Example

```

scli --mdm_ip 192.168.1.200 --query_device_latency_meters
--sds_ip 192.168.1.5

```

query_device_test

Retrieve the SDS device test results. Every SDS saves results for the last two tests per device.

Syntax

```

scli --query_device_test ((--device_id <ID> | ((--sds_id <ID> | --
sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) (--device_name
<NAME> | --device_path <PATH>))) | (--sds_id <ID> | --sds_name
<NAME> | --sds_ip <IP> [--sds_port <PORT>]) | (((--
protection_domain_id <ID> | --protection_domain_name <NAME>) --
storage_pool_name <NAME>) | --storage_pool_id <ID>))

```

Parameters

```

--device_id <ID>
    Device ID

--sds_id <ID>
    SDS ID

--sds_name <NAME>
    SDS name

--sds_ip <IP>
    SDS IP address

--sds_port <PORT>
    Port associated with the SDS

--device_id <ID>
    Device ID

--device_name <NAME>

```

SDS storage device name or file name

```
--device_path <PATH>
    File path to storage device

--protection_domain_id <ID>
    Protection Domain ID

--protection_domain_name <NAME>
    Protection Domain name

--storage_pool_name <NAME>
    Storage Pool name

--storage_pool_id <ID>
    Storage Pool ID
```

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --mdm_ip 192.168.1.200 --query_device test
--sds_ip 192.168.1.6 --device_name /dev/sdb
```

query_sds_device_info

Retrieve detailed information for the specified SDS device, or for all devices in the specified SDS.

Syntax

```
scli --query_sds_device_info (--device_id <ID> | ((--sds_id <ID> |
--sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) (--
device_name <NAME> | --device_path <PATH>)))
[--all_devices]
```

Parameters

```
--device_id <ID>
    ID assigned to the storage or RFcache device

--sds_id <ID>
    SDS ID

--sds_name <NAME>
    SDS name

--sds_ip <IP>
    SDS IP address

--sds_port <PORT>
    Port associated with the SDS
```

--device_name <NAME>
Name assigned to the storage or RFcache device

--device_path <PATH>
Device path or file path of the storage or RFcache device

--all_devices
Return detailed information for all devices in the specified SDS.

Example

```
scli --query_sds_device_info --sds_name sds18 --device_name 18-slot5
```

remove_sds_device

Initiate removal of a storage device from an SDS. Note that this process is asynchronous, and will run in the background.

An SDS device can be removed at any time, and no downtime is required. The removal process is asynchronous and runs in the background.

During execution of this command, the associated data is replicated to different nodes. Therefore, the process may take a long time.

When removing an SDS device on a VMware server, use the vSphere client.

Note

If the capacity of this SDS is still used by volumes, and cannot be replaced, the command will fail.

Syntax

```
scli --remove_sds_device (--device_id <ID> | ((--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) (--device_name <NAME> | --device_path <PATH>)))
```

Parameters

--device_id <ID>
ID of the device to be removed

--sds_id <ID>
ID of the SDS from which the device should be removed

--sds_name <NAME>
Name of the SDS from which the device should be removed

--sds_ip <IP>
IP address of the SDS from which the device should be removed

--sds_port <PORT>
Port associated with the SDS

--device_name <NAME>

Name of the storage device or file to be removed from the SDS

--device_path <PATH>

Path of the storage device to be removed from the SDS

Example

```
scli --mdm_ip 192.168.1.200 --remove_sds_device
--sds_ip 192.168.1.6 --device_name /dev/sdb
```

Related operations

To abort the removal, run the command `scli --abort_remove_sds_device`.

To track progress of the removal operation, use either of the following queries:

- `scli --query_sds_device_info`
- `scli --query_sds`

rename_device

Assign a name to, or rename, an SDS device.

Note

To rename an RFCache device on an SDS, use the `rename_sds_rfcache_device` command.

Syntax

```
scli --rename_device (--device_id <ID> | ((--sds_id <ID> | --
sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>])) (--device_name
<NAME> | --device_path <PATH>))) --new_name <NAME>
```

Parameters

None.

--device_id <ID>

ID of the SDS device

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port associated with the SDS

--device_name <NAME>

Name of the SDS device

--device_path <PATH>

Path of the SDS device

--new_name *<NAME>*

New name to be assigned to the SDS device

Example

```
scli --rename_device --sds_ip 8.8.8.100 --device_name flash_18 --
new_name flash_10018
```

set_sds_device_led

Turn the LED on a storage or cache device on or off.

Syntax

```
scli --set_sds_device_led (--device_id <ID> | ((--sds_id <ID> | --
sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) (--device_name
<NAME> | --device_path <PATH>))) (--led_on | --led_off)
```

Parameters

--device_id *<ID>*

ID assigned to the storage or RFcache device

--sds_id *<ID>*

SDS ID

--sds_name *<NAME>*

SDS name

--sds_ip *<IP>*

SDS IP address

--sds_port *<PORT>*

Port associated with the SDS

--device_name *<NAME>*

Name assigned to the storage or RFcache device

--device_path *<PATH>*

Device path or file path of a storage or RFcache device

--led_on

Turn the LED on.

--led_off

Turn the LED off.

Example

```
scli --set_sds_device_led --sds_ip 192.168.1.5 --sds_port 7072 --
device_name slot5 --led_on
```

start_device_test

Initiate a device test for one or all SDS devices.

Syntax

```
scli --start_device_test ((--device_id <ID> | ((--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) (--device_name <NAME> | --device_path <PATH>))) | (--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) | (((--protection_domain_id <ID> | --protection_domain_name <NAME>) --storage_pool_name <NAME>) | --storage_pool_id <ID>)) (Options)
(Control)
[--i_am_sure]
```

Parameters

--device_id <ID>

Device ID

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

IP address associated with the SDS

--sds_port <PORT>

Port associated with the SDS

--device_name <NAME>

SDS storage device name or file

--device_path <PATH>

SDS storage device path or file path

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Options

Choose several:

--io_type {read | write}

The I/O type: read (default) or write. If the storage device is in use, only read testing can be performed.

--io_pattern {random | sequential}

The I/O pattern: random (default) or sequential.

--io_size_kb <SIZE>

The read or write I/O size in KB. Range is 4 - 512 KB. Default: 8.

Control

Choose several:

--test_time <TIME>

Maximum test run time in seconds. Default: 10 seconds.

--io_total_size_mb <SIZE>

The total size of the test reads or writes in MB. Range is 1 - 32768 MB, which specifies the total I/O size in MB. Default: 128 MB

<blank>

Use defaults

Example

```
scli --mdm_ip 192.168.1.200 --start_device_test
--sds_ip 192.168.1.6 --device_path /dev/sdb --io_type write --
io_size 8
```

update_device_original_path

Update the SDS device's original path configuration to the current device path.

The device path on the SDS may have changed after a server restart. If the current device path is different from the original path created during SDS configuration, you may not be able to identify the device. You can still identify the device with its name or ID, or use this command to update the SDS configuration with the current SDS device path.

Note

When you query an SDS, you will receive device information similar to the following:

```
2: Name: N/A Path: /tmp/mos_sim_dev_4_1 Original-path: /tmp/mos_sim_dev_4_1
ID: bb8871ac00040001
```

Syntax

```
scli --update_device_original_path (--device_id <ID> | ((--sds_id
<ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) (--
device_name <NAME> | --device_path <PATH>)))
```

Parameters

--device_id *<ID>*
Device ID

--sds_id *<ID>*
SDS ID

--sds_name *<NAME>*
SDS name

--sds_ip *<IP>*
IP address associated with the SDS

--sds_port *<PORT>*
Port associated with the SDS

--device_name *<NAME>*
SDS storage device name or file

--device_path *<PATH>*
Current path of the SDS device

Example

```
scli --update_device_original_path --device_id bb8871ac00040001
```

CHAPTER 3

Fault Set Commands

This section contains commands for managing Fault Sets.

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add_fault_set

Add an empty Fault Set to a Protection Domain.

Fault Sets are subsets of a given Protection Domain. They provide additional safeguards for protecting your data against hardware failure. When you define SDSs later on, you can add them to a Fault Set.

Fault Sets are enabled by default.

Note

When defining Fault Sets, you must follow the guidelines described in the *ScaleIO User Guide*. Failure to do so may prevent creation of volumes.

Syntax

```
scli --add_fault_set (--protection_domain_id <ID> | --
protection_domain_name <NAME>)
[--fault_set_name <NAME>]
```

Parameters

--protection_domain_id <ID>

ID of the Protection Domain to which the Fault Set will be added

--protection_domain_name <NAME>

Name of the Protection Domain to which the Fault Set will be added

--fault_set_name <NAME>

Name of the new Fault Set

Example

```
scli --add_fault_set --protection_domain_name sio-pd1 --
fault_set_name sio-fs1
```

Fault Set names

Assign each Fault Set a meaningful name. When a name has not been defined, the system may display default system-defined names that use the Fault Set's ID.

Each Fault Set name must conform to the following rules:

1. Contains fewer than 32 characters
 2. Contains only alphanumeric and punctuation characters
 3. Is unique within the object type
-

Note

ScaleIO objects are assigned a unique ID that can be used to identify the object in CLI commands. You can retrieve the ID via a query or through the object's property sheet in the GUI.

clear_fault_set

Remove all SDSs from the specified Fault Set.

Syntax

```
scli --clear_fault_set (--fault_set_id <ID> | ((--
protection_domain_id <ID> | --protection_domain_name <NAME>) --
fault_set_name <NAME>))
[--i_am_sure]
```

Parameters

--fault_set_id <ID>

Fault Set ID

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--fault_set_name <NAME>

Fault Set name

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Example

```
scli --clear_fault_set --protection_domain_name pd18 --
fault_set_name sio-fs1
```

query_all_fault_sets

Retrieve information for all the Fault Sets in the specified Protection Domain.

Syntax

```
scli --query_all_fault_sets (--protection_domain_id <ID> | --
protection_domain_name <NAME>)
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

Example

```
scli --query_all_fault_sets --protection_domain_name sio-pd25
```

query_fault_set

Retrieve information about the specified Fault Set.

Syntax

```
scli --query_fault_set (--fault_set_id <ID> | ((--  
protection_domain_id <ID> | --protection_domain_name <NAME>) --  
fault_set_name <NAME>))
```

Parameters

--fault_set_id <ID>

Fault Set ID

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--fault_set_name <NAME>

Name of the new Fault Set

Example

```
scli --query_fault_set --protection_domain_name pd18 --  
fault_set_name fs-rack25
```

remove_fault_set

Remove the specified Fault Set.

Ensure that the Fault Set is empty before executing this command. You can remove SDSs from the Fault Set using the `clear_fault_set` command.

Syntax

```
scli --remove_fault_set (--fault_set_id <ID> | ((--  
protection_domain_id <ID> | --protection_domain_name <NAME>) --  
fault_set_name <NAME>))
```

Parameters

--fault_set_id <ID>

Fault Set ID

--protection_domain_id <ID>

Protection Domain ID


```
--protection_domain_name <NAME>
    Protection Domain name

--fault_set_name <NAME>
    Name of the new Fault Set
```

Example

```
scli --remove_fault_set --protection_domain_name pd18 --
fault_set_name sio-fs1
```

rename_fault_set

Rename the specified Fault Set.

Syntax

```
scli --rename_fault_set (--fault_set_id <ID> | ((--
protection_domain_id <ID> | --protection_domain_name <NAME>) --
fault_set_name <NAME>)) --new_name <NAME>
```

Parameters

```
--fault_set_id <ID>
    Fault Set ID

--protection_domain_id <ID>
    Protection Domain ID

--protection_domain_name <NAME>
    Protection Domain name

--fault_set_name <NAME>
    Fault Set name

--new_name <NAME>
    New name to assign to the Fault Set
```

Example

```
scli --rename_fault_set --protection_domain_name pd18 --
fault_set_name sio-fs-test --new_name sio-fs1
```


CHAPTER 4

General Commands

This section contains general CLI commands.

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query_license

Retrieve information about current license restrictions.

Syntax

```
scli --query_license
```

Parameters

None.

Example

```
scli --mdm_ip 192.168.1.200 --query_license
```

query_remote_syslog

Retrieve the remote syslog module state and configuration.

Syntax

```
scli --query_remote_syslog
```

Parameters

None.

Example

```
scli --query_remote_syslog
```

query_oscillating_failure_counter_parameters

Retrieve oscillating failure counter parameters.

Syntax

```
scli --query_oscillating_failure_counter_parameters --
failure_counter (<COUNTER FROM GROUP A> (--protection_domain_id
<ID> | --protection_domain_name <NAME>) | <COUNTER FROM GROUP B> |
<COUNTER FROM GROUP C> (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) | --
storage_pool_id <ID>))
```

Parameters

--failure_counter <COUNTER>

The oscillating failure counter to be queried. Counters are grouped as follows:

Counter Group A

MDM and SDS-related counters:

- mdm_sds_network_disconnections

- sds_sds_network_disconnections
- sds_decoupled
- sds_configuration_failures
- sds_receive_buffer_allocation_failures

Counter Group B

SDC-related counters:

- sdc_mdm_network_disconnections
- sdc_sds_network_disconnections
- sdc_long_operations
- sdc_memory_allocation_failures
- sdc_socket_allocation_failures

Counter Group C

SDS device-related counters:

- sds_device_long_successful_ios

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

Example

```
scli --query_oscillating_failure_counter_parameters --
failure_counter sds_device_long_successful_ios --
protection_domain_name pd10 --storage_pool_name sp18
```

reset_oscillating_failure_counters

Reset the specified oscillating failure counters to zero. This command is useful when you have fixed a problem and want to ensure that an alert is no longer active in the system.

Syntax

```
scli --reset_oscillating_failure_counters (--failure_counter
(<COUNTER FROM GROUP A> | (--protection_domain_id <ID> | --
protection_domain_name <NAME>) | --all_sds) | <COUNTER FROM GROUP
B> --all_sdc | <COUNTER FROM GROUP C> | ((----protection_domain_id
<ID> | --protection_domain_name <NAME>) --storage_pool_name <NAME>)
| --storage_pool_id <ID>) | --all_devices) | --all_counters)
```

Parameters**--failure_counter <COUNTER>**

The oscillating failure counter to be reset to zero. Counters are grouped as follows:

Counter Group A

MDM and SDS-related counters:

- mdm_sds_network_disconnections
- sds_sds_network_disconnections
- sds_decoupled
- sds_configuration_failures
- sds_receive_buffer_allocation_failures

Counter Group B

SDC-related counters:

- sdc_mdm_network_disconnections
- sdc_sds_network_disconnections
- sdc_long_operations
- sdc_memory_allocation_failures
- sdc_socket_allocation_failures

Counter Group C

SDS device-related counters:

- sds_device_long_successful_ios

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

--all_sds

Reset the counter parameters on all SDSs.

--all_sdc

Reset the counter parameters on all SDCs.

--all_devices

Reset the counter parameters on all SDS devices.

--all_counters

Reset all counters to zero.

Example

```
scli --reset_oscillating_failure_counters --failure_counter
mdm_sds_network_disconnections --all_sds
```

set_cli_login_banner_preemptive_acceptance

Enable or prevent CLI users from preemptively accepting the login banner.

Syntax

```
scli --set_cli_login_banner_preemptive_acceptance (--enable | --
disable)
```

Parameters**--enable**

Allow CLI users to preemptively accept the login banner

--disable

Prevent CLI users from preemptively accepting the login banner

Example

```
scli --set_cli_login_banner_preemptive_acceptance --enable
```

set_license

Set the ScaleIO license.

Setting the license is a precondition for all other configuration commands. To set the system license, you must first obtain a license from Dell EMC.

Syntax

```
scli --set_license --license_file <LICENSE_FILE>
```

Parameters**--license_file <LICENSE_FILE>**

Path to the file containing the license key value supplied by Dell EMC

Example

```
scli --mdm_ip 192.168.1.200 --set_license
--license_file /tmp/0239SH4SS89023T6.lic
```

set_login_banner

Set the login banner that is displayed at every login to the system, or remove an existing login banner.

The maximum file size for the banner is 16 KB. Only ASCII text files are supported.

Syntax

```
--set_login_banner (--filename <FILE> | --remove_banner)
```

Parameters

--filename <FILE>

File containing the login banner to set

--remove_banner

Remove the login banner.

Example

```
scli --set_login_banner --filename login_banner.txt
```

set_oscillating_failure_counter_parameters

Modify oscillating failure counter parameters. You can use this command to configure the time interval associated with each window type and the number of failures allowed before reporting commences for each window type, per counter.

Syntax

```
scli --set_oscillating_failure_counter_parameters --failure_counter
(<COUNTER FROM GROUP A> ((--protection_domain_id <ID> | --
protection_domain_name <NAME>) | --all_sds) | <COUNTER FROM GROUP
B> --all_sdc | <COUNTER FROM GROUP C> (((---protection_domain_id
<ID> | --protection_domain_name <NAME>) --storage_pool_name <NAME>)
| --storage_pool_id <ID>) | --all_devices) --window_type {SHORT |
MEDIUM | LONG} --window_interval <INTERVAL> --
failures_threshold<ID> <NUM OF FAILURES IN INTERVAL>
```

Parameters

--failure_counter <COUNTER>

The oscillating failure counter to be reset to zero. Counters are grouped as follows:

Counter Group A

MDM and SDS-related counters:

- mdm_sds_network_disconnections
- sds_sds_network_disconnections
- sds_decoupled
- sds_configuration_failures

- `sds_receive_buffer_allocation_failures`

Counter Group B

SDC-related counters:

- `sdc_mdm_network_disconnections`
- `sdc_sds_network_disconnections`
- `sdc_long_operations`
- `sdc_memory_allocation_failures`
- `sdc_socket_allocation_failures`

Counter Group C

SDS device-related counters:

- `sds_device_long_successful_ios`

`--protection_domain_id <ID>`

Protection Domain ID

`--protection_domain_name <NAME>`

Protection Domain name

`--storage_pool_name <NAME>`

Storage Pool name

`--storage_pool_id <ID>`

Storage Pool ID

`--all_sds`

Apply the counter parameters to all SDSs.

`--all_sdc`

Apply the counter parameters to all SDCs.

`--all_devices`

Apply the counter parameters to all SDS devices.

`--window_type {SHORT | MEDIUM | LONG}`

Window type to be modified: short, medium, or long

`--window_interval <INTERVAL>`

New window time interval in seconds. The valid interval range is 1-86400. If the interval is set to 0, the window type is disabled.

`--failures_threshold<ID> <NUM OF FAILURES IN INTERVAL>`

Maximum number of failures per window type to be ignored before error reporting begins

Example

```
scli --set_oscillating_failure_counter_parameters --failure_counter
mdm_sds_network_disconnections --window_interval 120 --
failures_threshold 10 --window_type short --all_sds
```

set_remote_read_only_limit_state

Configure the ScaleIO system to restrict access from remote clients to read-only operations on the MDM. When this restriction is enabled, remote client users cannot change any configurations on the MDM. However, users on a local host may still make configuration changes while the restriction is enforced.

Note

A local user is one that successfully communicates with the MDM using the IP address 127.0.0.1 (the default IP address used by SCLI). If you try to issue commands from the local machine using other local IP addresses, you will not be able to configure the system.

Syntax

```
scli --set_remote_read_only_limit_state --
remote_read_only_limit_state {enabled | disabled}
```

Parameters

--remote_read_only_limit_state {enabled | disabled}

Enable or disable restricted state. Default: disabled.

Example

```
scli --set_remote_read_only_limit_state --
remote_read_only_limit_state enabled
```

set_syslog_facility

Set the facility field of the syslog events. Legal values are 0 to 23.

Syntax

```
scli --set_syslog_facility --remote_syslog_server_ip <IP> --
syslog_facility <FACILITY>
```

Parameters

--remote_syslog_server_ip <IP>

Comma-separated list of IP addresses or hostnames of syslog servers. Omit the space after each comma.

--syslog_facility <FACILITY>

Control the facility field of the event. Default is 16.

Example

```
scli --set_syslog_facility --remote_syslog_server_ip 192.168.1.201
--syslog_facility 16
```

start_remote_syslog

Start posting events to a remote syslog server.

Syntax

```
scli --start_remote_syslog --remote_syslog_server_ip <IP>
[--remote_syslog_server_port <PORT>]
[--syslog_facility <FACILITY>]
[--attach_event_code]
```

Parameters

--remote_syslog_server_ip <IP>

Comma-separated list of IP addresses or hostnames of syslog servers. Omit the space after each comma.

--remote_syslog_server_port <PORT>

Syslog server port. Default is 1468.

--syslog_facility <FACILITY>

Control the facility field of the event. Default is 16.

--attach_event_code

Add the posted event code to the event message. This parameter is disabled by default.

Example

```
scli --start_remote_syslog --remote_syslog_server_ip 192.168.1.201
--syslog_facility 16
```

stop_remote_syslog

Stop posting events to a remote syslog server.

Syntax

```
scli --stop_remote_syslog --remote_syslog_server_ip <IP>
```

Parameters

--remote_syslog_server_ip <IP>

Comma-separated list of IP addresses or hostnames of syslog servers. Omit the space after each comma.

Example

```
scli --stop_remote_syslog --remote_syslog_server_ip 192.168.1.201
```

CHAPTER 5

LDAP Commands

This section contains commands for LDAP.

• add_ldap_service	54
• remove_ldap_group_from_role_assignment	55
• remove_ldap_service	56
• rename_ldap_service	57

add_ldap_service

Add an LDAP service to the system. The ID of the added LDAP service will be returned.

Note

ScaleIO systems support authentication by up to eight LDAP servers. When multiple LDAP servers are used, add each one separately using this command.

Syntax

```
scli --add_ldap_service --ldap_service_uri <URI> --ldap_base_dn
<LDAP_DN>
[--ldap_service_name <LDAP_NAME>]
[--object_class_attribute <ATTR>]
[--user_id_attribute_name <NAME>]
[--member_of_attribute_name <NAME>]
[--disable_recursive_search]
```

Parameters

--ldap_service_uri <URI>

URI of the LDAP service:

<LDAP_SCHEMA>://<LDAP_HOSTNAME>[:<PORT_NUMBER>]

Where:

<LDAP_SCHEMA>

Defines the connection protocol:

- LDAPS: Secure LDAP connection (recommended)
- LDAP: non-secure LDAP connection

<LDAP_HOSTNAME>

LDAP hostname

<PORT_NUMBER>

LDAP service port (default: 636)

Example: ldaps://my.ldaphost.com:636

Note

No extra validation is performed at this stage.

--ldap_base_dn <LDAP_DN>

Base Distinguished Name (DN) of users in the domain. Must be a valid DN containing the DC substring. For example, if a user corporate login is

johnd@ecme.corp.com, the DC string would be DC=ecme, DC=corp, DC=com.

Note

On Active Directory Windows servers, use the `dsquery` tool to find LDAP Base DN information. To see available options, in the command line type `dsquery /?`
 On Linux servers, from the command line, use `ldapsearch`. (Ldapsearch may need to be installed.)

```
--ldap_service_name <LDAP_NAME>
    LDAP service name

--object_class_attribute <ATTR>
    Object class attribute used to identify a user. It is used in the search filter.
    Default: user.

--user_id_attribute_name <NAME>
    Attribute name that defines the user ID and is used in the search filter. Default:
    sAMAccountName.

--member_of_attribute_name <NAME>
    Attribute name that defines the contained group and is used in the search filter.
    Default: memberOf.

--disable_recursive_search
    Disable recursive search
```

Example

```
scli --add_ldap_service --ldap_service_uri "ldaps://ldaps.ecme.com"
--ldap_base_dn "OU=SIO_OU_1,DC=ldaps,DC=local"
```

where:

- `ldaps://ldaps.ecme.com` is the host name of the authentication server.
- `OU=SIO_OU_1` is a specific organizational unit group defined in the Active Directory.
- `DC=ldaps` and `DC=local` are the domain component parts of the Base DN.

remove_ldap_group_from_role_assignment

Remove LDAP groups from system roles assignments.

Syntax

```
scli --remove_ldap_group_from_role_assignment (--ldap_service_id
<LDAP_SERVICE_ID> | --ldap_service_name <LDAP_SERVICE_NAME>)
[--administrator_role]
[--security_role]
[--backend_config_role]
[--frontend_config_role]
[--monitor_role]
```

Parameters

```
--ldap_service_id <LDAP_SERVICE_ID>
```

ID of the LDAP service

--ldap_service_name *<LDAP_SERVICE_NAME>*

Name of the LDAP service

Options:

(choose at least one of the following)

--administrator_role

LDAP group containing users with administration privileges

--security_role

LDAP group containing users with security privileges

--backend_config_role

LDAP group that containing with backend configuration privileges

--frontend_config_role

LDAP group that containing with frontend configuration privileges

--monitor_role

LDAP group that containing with monitoring privileges

Example

```
scli --remove_ldap_group_from_role_assignment --ldap_service_id
0xAABBCCDDEEFF0011 --administrator_role
"CN=SIO_GRP_1,OU=SIO_OU_1,DC=ldaps,DC=ecme,DC=com"
```

remove_ldap_service

Remove an LDAP service from the system.

Syntax

```
scli --remove_ldap_service (--ldap_service_id <LDAP_SERVICE_ID> | --
ldap_service_name <LDAP_SERVICE_NAME> | --remove_all)
```

Parameters

--ldap_service_id *<LDAP_SERVICE_ID>*

ID of the LDAP service

--ldap_service_name *<LDAP_SERVICE_NAME>*

Name of the LDAP service

--remove_all

Remove all LDAP services.

Example

```
scli --remove_ldap_service --ldap_service_name ldap1
```


rename_ldap_service

Assign a name to, or rename, an LDAP service.

Syntax

```
scli --rename_ldap_service (--ldap_service_id <LDAP_SERVICE_ID> | --  
ldap_service_name <LDAP_SERVICE_NAME>) --new_name <NAME>
```

Parameters

--ldap_service_id <LDAP_SERVICE_ID>

ID of LDAP service

--ldap_service_name <LDAP_SERVICE_NAME>

Name of LDAP service

--new_name <NAME>

New name to be assigned to the LDAP service

Example

```
scli --rename_ldap_service --ldap_service_name prevLSName --  
new_name newLSName
```


CHAPTER 6

Protection Domain Commands

This section contains commands for managing Protection Domains.

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• inactivate_protection_domain	61
• query_protection_domain	62
• remove_protection_domain	62
• rename_protection_domain	63

activate_protection_domain

Activate a Protection Domain.

Protection Domains are activated by default. Use this command to activate a Protection Domain that was inactivated.

Syntax

```
scli --activate_protection_domain (--protection_domain_id <ID> | --
protection_domain_name <NAME>)
[--force_activate]
[--i_am_sure]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--force_activate

Activates the Protection Domain, ignoring current system errors

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Example

```
scli --activate_protection_domain --protection_domain_name pd1
```

add_protection_domain

Add a Protection Domain.

Syntax

```
scli --add_protection_domain
[--protection_domain_name <NAME>]
```

Parameters

--protection_domain_name <NAME>

Unique name to assign the Protection Domain

Example

```
Example
scli --mdm_ip 192.168.1.200 --add_protection_domain
--protection_domain_name rack_1.1
```

Protection Domain names

Assign each Protection Domain a meaningful name associated with its operational role. When a name has not been defined, the system may display default system-defined names that use the volume's ID.

Each Protection Domain name should conform to the following rules:

1. Contains fewer than 32 characters
2. Contains only alphanumeric and punctuation characters
3. Is unique within the object type

Note

ScaleIO objects are assigned a unique ID that can be used to identify the object in CLI commands. You can retrieve the ID via a query or through the object's property sheet in the GUI.

inactivate_protection_domain

Inactivate the specified Protection Domain. Using this command is a much more effective way to shut down nodes and is preferable to shutting them down manually.

Note

When you inactivate a Protection Domain, the data remains on the SDSs. It is therefore preferable to remove a Protection Domain if you no longer need it.

Syntax

```
scli --inactivate_protection_domain (--protection_domain_id <ID> |
--protection_domain_name <NAME>)
[--force_inactivate]
[--i_am_sure]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--force_inactivate

Inactivate the Protection Domain, ignoring current system errors.

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Example

```
scli --inactivate_protection_domain --protection_domain_name pd1
```

When this feature is in effect, the system may perform the following activities in the background:

- Determine whether there are any current rebuild/rebalance activities taking place. If so, the shutdown will be delayed (unless it is forced) until they are finished.
- Block future rebuild/rebalance activities.
- Pause application I/O and disable access to volumes.
- Move the DRL mode of all SDSs to harden in preparation for rebooting the server.
- Reload all SDSs before re-enabling data access.

query_protection_domain

Retrieve aggregated information about all objects in a single Protection Domain.

Syntax

```
scli --query_protection_domain (--protection_domain_id <ID> | --
protection_domain_name <NAME>
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

Example

```
scli --mdm_ip 192.168.1.200 --query_protection_domain --
protection_domain_name rack_1.1
```

remove_protection_domain

Remove a Protection Domain from the ScaleIO system. You can only remove a Protection Domain if no SDS and no Storage Pool is associated with it.

Syntax

```
scli --remove_protection_domain (--protection_domain_id <ID> | --
protection_domain_name <NAME>)
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

Example

```
scli --mdm_ip 192.168.1.200 --remove_protection_domain
--protection_domain_name my_protection_domain
```

rename_protection_domain

Assign a name to, or rename, a Protection Domain.

Syntax

```
scli --rename_protection_domain (--protection_domain_id <ID> | --
protection_domain_name <NAME>)
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--new_name <NAME>

Example

```
scli --mdm_ip 192.168.1.200 --rename_protection_domain --
protection_domain_name pd1 --new_name protection_domain_1.
```

Protection Domain names

Assign the Protection Domain a meaningful name associated with its operational role. The Protection Domain name should conform to the following rules:

1. Contains fewer than 32 characters
2. Contains only alphanumeric and punctuation characters
3. Is unique within the object type

CHAPTER 7

RFcache Commands

This section contains commands for managing RFcache.

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- [set_rfcache_parameters](#)..... 67

disable_sds_rfcache

Disable the RFSache feature on a specific SDS or in an entire Protection Domain.

Syntax

```
scli --disable_sds_rfcache ((--protection_domain_id <ID> | --
protection_domain_name <NAME>) | (--sds_id <ID> | --sds_name
<NAME> | --sds_ip <IP> [--sds_port <PORT>]))
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

--sds_id <ID>
SDS ID

--sds_name <NAME>
SDS name

--sds_ip <IP>
SDS IP address

--sds_port <PORT>
Port assigned to the SDS

Example

```
scli --disable_rfcache --protection_domain_name pd02
```

enable_sds_rfcache

Enable RFSache on a specific SDS, or in an entire Protection Domain.

Syntax

```
scli --enable_sds_rfcache ((--protection_domain_id <ID> | --
protection_domain_name <NAME>) | (--sds_id <ID> | --sds_name <NAME>
| --sds_ip <IP> [--sds_port <PORT>]))
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

--sds_id <ID>

SDS ID

--sds_name *<NAME>*

SDS name

--sds_ip *<IP>*

SDS IP address

--sds_port *<PORT>*

Port assigned to the SDS

Example

```
scli --enable_rfcache --protection_domain_name pd25 --sds_name
sds25_10
```

set_rfcache_parameters

Set RFcache parameters per Protection Domain.

Syntax

```
scli --set_rfcache_parameters (--protection_domain_id <ID> | --
protection_domain_name <NAME>)
[--page_size_kb <SIZE>]
[--max_io_size_kb <SIZE>]
[--rfcache_pass_through_mode <MODE>]
```

Parameters

--protection_domain_id *<ID>*

Protection Domain ID

--protection_domain_name *<NAME>*

Protection Domain name

--page_size_kb *<SIZE>*

Cache page size in KB. Valid range: 4-64.

--max_io_size_kb *<SIZE>*

Cache maximum I/O size in KB. Valid range: 32-256.

--rfcache_pass_through_mode *<MODE>*

Pass-through mode. One of:

- pass_through_none
- pass_through_read
- pass_through_write
- pass_through_read_and_write
- pass_through_write_miss

Example

```
scli --set_rfcache_parameters --protection_domain_name pd25 --  
page_size_kb 32 --max_io_size_kb 128 --rfcache_pass_through_mode  
pass_through_write
```

CHAPTER 8

SDC Commands

This section contains commands for managing SDCs.

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add_sdc

Approve an SDC to map volumes and allow an SDC to access the MDM.

Syntax

```
scli --add_sdc --sdc_ip <ip> | --sdc_guid <guid>
[--sdc_name <name>]
```

Parameters

- sdc_ip <ip>**
SDC IP address
- sdc_guid <guid>**
SDC GUID
- sdc_name <name>**
Name to assign to the SDC

Note

You can find the SDC's GUID using of these methods:

- From the command line, run:

```
scli --query_all_sdc
```

- View the SDC's properties in the GUI.
- Locally in `/opt/emc/scaleio/sdc/bin/drv_cfg`, with root access permission, run:

```
drv_cfg --query_guid
```

Example

```
scli --add_sdc --sdc_ip 10.125.120.53 --sdc_name sdc53
```

query_all_approved_sdc

Query the system when it is operating in restricted SDC mode for all SDCs that have been approved by the system.

Note

This query is useful when restricted SDC mode is enabled and you want to determine which SDCs can be used for volume mapping.

Syntax

```
scli --query_all_approved_sdc
```

Parameters

None.

Example

```
scli --query_all_approved_sdc
```

query_all_sdc

Retrieve information about all SDCs in the system.

Syntax

```
scli --query_all_sdc
```

Parameters

None.

Example

```
scli --mdm_ip 192.168.1.200 --query_all_sdc
```

query_restricted_sdc_mode

Query whether restricted SDC mode is enabled or disabled in the ScaleIO system.

If restricted SDC mode is enabled, you must register to the system each SDC to which you want to map volumes using the `--add_sdc` command.

Syntax

```
scli --query_restricted_sdc_mode
```

Parameters

None.

Example

```
scli --query_restricted_sdc_mode
```

query_sdc

Retrieve information about the specified SDC.

Syntax

```
scli --query_sdc --sdc_id <ID> | --sdc_name <NAME> | --sdc_guid
<GUID> | --sdc_ip <IP>
[--show_oscillating_failures]
```

Parameters

--sdc_id <ID>

SDC ID

--sdc_name <NAME>

SDC name

--sdc_guid <GUID>

SDC Global Unique Identifier

--sdc_ip <IP>

SDC IP address

--show_oscillating_failures

Show extended oscillating failure information if there are one or more failures.

Example

```
scli --mdm_ip 192.168.1.200 --query_sdc --sdc_ip 192.168.2.25
```

query_sdc_volume_limits

Retrieve the IOP and bandwidth limits that one SDC generates for the specified volume.

Syntax

```
scli --query_sdc_volume_limits (--volume_id <ID> | --volume_name
<NAME>) (--sdc_id <ID> | --sdc_name <NAME> | --sdc_guid <GUID> | --
sdc_ip <IP>)
```

Parameters

--volume_id <ID>

Volume ID

--volume_name <NAME>

Volume name

--sdc_id <ID>

SDC ID


```
--sdc_name <NAME>
    SDC name

--sdc_guid <GUID>
    SDC Global Unique Identifier

--sdc_ip <IP>
    SDC IP address
```

Example

```
scli --mdm_ip 192.168.1.200 --query_sdc_volume_limits --volume_name
voll --sdc_ip 192.168.1.3 --mdm_port 6611
```

remove_sdc

Remove an SDC from the ScaleIO system.

If your system is using Restricted SDC mode, this command also prevents an SDC's access to the MDM. (Its approved status is removed.) As a result, volumes cannot be mapped to the SDC.

If the SDC is currently connected to the MDM, the command will fail, and the connection will be maintained. The command will also fail if the SDC has volume mapping.

Syntax

```
scli --remove_sdc (--sdc_id <ID> | --sdc_name <NAME> | --sdc_guid
<GUID> | --sdc_ip <IP>)
```

Parameters

```
--sdc_id <ID>
    SDC ID. To obtain the ID, query the SDC using the query_all_sdc, or view the
    SDC's properties in the GUI.

--sdc_name <NAME>
    SDC name

--sdc_guid <GUID>
    SDC Global Unique Identifier. To obtain the GUID, query the SDC using the
    query_all_sdc, view the SDC's properties in the GUI, or run the drv_cfg --
    query_guid command locally from /opt/emc/scaleio/sdc/bin (root
    access permission required).

--sdc_ip <IP>
    SDC IP address
```

Example

```
scli --remove_sdc --sdc_ip 10.125.120.53
```

rename_sdc

Assign a new name to the specified SDC.

Syntax

```
scli --rename_sdc (--sdc_id <ID> | --sdc_name <NAME> | --sdc_guid <GUID> | --sdc_ip <IP>) --new_name <NAME>
```

Parameters

- sdc_id <ID>**
SDC ID
- sdc_name <NAME>**
SDC name
- sdc_guid <GUID>**
SDC Global Unique Identifier
- sdc_ip <IP>**
SDC IP address
- new_name <NAME>**
New name to assign to the specified SDC

Example

```
scli --rename_sdc --sdc_id c8a300bd00000000 --new_name sdc-flash-21
```

set_sdc_volume_limits

Set limits to the IOPS and bandwidth that one SDC generates for the specified volume. This enables you to control the quality of service (QoS).

Syntax

```
scli --set_sdc_volume_limits (--volume_id <ID> | --volume_name <NAME>) (--sdc_id <ID> | --sdc_name <NAME> | --sdc_guid <GUID> | --sdc_ip <IP>) (Options) [--i_am_sure]
```

Parameters

- volume_id <ID>**
Volume ID
- volume_name <NAME>**
Volume name
- sdc_id <ID>**
SDC ID

--sdc_name <NAME>

SDC name

--sdc_guid <GUID>

SDC Global Unique Identifier

--sdc_ip <IP>

SDC IP address

Options

Choose at least one:

--limit_iops <NUMBER>

Limit the volume IOPS. The number of IOPS must be larger than 10. 0 is unlimited.

--limit_bandwidth <NUMBER>

Limits the volume network bandwidth. The bandwidth is in MB/s. 0 is unlimited

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Example

```
scli --mdm_ip 192.168.1.200 --set_sdc_volume_limit
--volume_name vol1 --sdc_ip 192.168.1.3 --limit_iops 100
```

set_approved_sdc_ips

Set a list of up to four IP addresses that are approved for the given SDC.

Syntax

```
scli --set_approved_sdc_ips (--sdc_id <ID> | --sdc_name <NAME> | --
sdc_guid <GUID> | --sdc_ip <IP>) --sdc_ips <IPS>
```

Parameters

--sdc_id <ID>

SDC ID

--sdc_name <NAME>

SDC name

--sdc_guid <GUID>

SDC GUID

--sdc_ip <IP>

IP address of an SDC

--sdc_ips <IPS>

A comma-separated list of SDC IP addresses. Omit the space after each comma.

Example

```
scli --set_approved_sdc_ips --sds_ips  
10.76.60.10,10.76.60.11,10.76.60.12,10.76.60.13
```

CHAPTER 9

SDS Commands

This section contains commands for managing SDSs.

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abort_remove_sds

Abort the removal of an SDS from a ScaleIO system. If it is performed at too late a stage in the removal process, the command may fail and the SDS will be removed.

Syntax

```
scli --abort_remove_sds (--sds_id <ID> | --sds_name <NAME>| --sds_ip <IP> [--sds_port <PORT>])
```

Parameters

--sds_id <ID>

The ID of the SDS whose removal you want to stop

--sds_name <NAME>

The name of the SDS whose removal you want to stop

--sds_ip <IP>

The IP address of the SDS whose removal you want to stop

--sds_port <PORT>

The port associated with the SDS

Example

```
scli --mdm_ip 192.168.1.200 --abort_remove_sds --sds_ip 192.168.1.4
```

add_sds

Add an SDS to a Protection Domain.

This command creates an SDS component and can be used to apply many configuration options at the time of creation. It informs the SDS about which devices to use, and for what purpose to use them (storage or Rfcache). By default, the command also performs tests on the devices it adds, and saves the results.

Note

During execution of the command, ScaleIO checks that the devices are clear before adding them. If a device is not clear, an error message is returned, and the command fails for that device.

Syntax

```
scli --add_sds --sds_ip <IP> [--sds_ip_role {sdc_only | sds_only | all}] ((--protection_domain_id <ID> | --protection_domain_name <NAME>) | (((--protection_domain_id <ID> | --protection_domain_name <NAME>) --storage_pool_name <NAME>) | --storage_pool_id <ID>) --device_path <PATHS> [--device_name <NAMES>]))
    [--sds_name <NAME>]
    [--fault_set_id <ID> | --fault_set_name <NAME>]
```

```
[--rmcache_size_mb <SIZE>]
[--enable_rmcache | --disable_rmcache]
[--sds_port <PORT>]
[--force_clean]
[--test_time <TIME>]
[{-test_only | --no_test}]
[--i_am_sure]
```

Parameters

--sds_ip <IP>

Comma-separated list of one or more IP addresses associated with the SDS over which the data will be transferred. See "SDS IP addresses and roles" below. Omit the space after each comma.

--sds_ip_role {sdc_only | sds_only | all}

Comma-separated list of IP roles associated with the SDS IP addresses. Omit the space after each comma. See "SDS IP addresses and roles" below.

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Comma-separated list of Storage Pool names to be associated with the storage devices, respectively. Omit the space after each comma. If only one Storage Pool is specified in the list, all devices are associated with it. Otherwise, each device is associated with the Storage Pool situated in the same position in the list.

--storage_pool_id <ID>

Comma-separated list of Storage Pool IDs to be associated with the storage devices, respectively. Omit the space after each comma. If only one Storage Pool is specified in the list, all devices are associated with it. Otherwise, each device is associated with the Storage Pool situated in the same position in the list.

--device_path <PATHS>

Comma-separated list of the full path to each devices to be added. Omit the space after each comma. A device can be a disk, an unmounted partition, or a file that represents free space on a mounted device. To force device take-over, use this command with the `force_device_takeover` flag, proceeding with caution.

--device_name <NAMES>

Comma-separated list of device names. Omit the space after each comma. When using this flag to assign names to the SDS devices. The number of names must equal the number of devices, and the names will be appropriated to the devices in the same order as they appear in the `device_path` list.

--sds_name <NAME>

Name assigned to the SDS

--fault_set_id <ID>

Fault Set ID

--fault_set_name <NAME>

Fault Set name

--rmcache_size_mb <SIZE>

Size of the SDS RAM cache in MB. Default: 128 MB to 300GB

--enable_rmcache | --disable_rmcache

Enable/disable RAM cache on the SDS

--sds_port <PORT>

Port associated with the SDS. Default: 7072

--force_clean

Clean a previous SDS configuration. Use this if the SDS was previously part of a ScaleIO system.

--test_time <TIME>

The maximum test run-time in seconds. Default: 10. The test will stop when it reaches either this limit, or the time it takes to complete 128 MB of data read/write, whichever is first.

Test options (choose one):

By default, ScaleIO tests the performance of each device being added before its capacity can be used. Two tests are performed on the given devices: random writes and random reads. When the tests are complete, the device capacity is added automatically to the Protection Domain storage used by the MDM. To modify this behavior, specify one of the test options:

--test_only

Devices will be tested, but not used. To start using their capacity, run the `--activate_sds_device` command.

--no_test

The device capacity will be used without any device testing.

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --add_sds --sds_name SDS87 --sds_ip 192.168.158.87 --
rmcache_size_mb 128 --storage_pool_name SP1 --
protection_domain_name PD1 --device_path /dev/sdc --
device_name /dev/sdc --enable_rmcache --force_clean --sds_ip_role
all
```


SDS names

Assign each SDS and SDS device a meaningful name in order to facilitate future object identification. This can be particularly helpful for SDS devices, because the defined name remains constant even if the path changes. When a name has not been defined, the system may display default system-defined names that use the SDS's first IP address.

Each name should conform to the following rules:

1. Contains fewer than 32 characters
2. Contains only alphanumeric and punctuation characters
3. Is unique within the object type

Note

ScaleIO objects are assigned a unique ID that can be used to identify the object in CLI commands. You can retrieve the ID via a query or through the object's property sheet in the GUI.

SDS IP addresses and roles

Configure up to eight IP addresses per SDS. Define each one with one of the following roles:

- **sdc_only**: Communications are enabled only between this SDS and SDCs. The MDM will not be aware of this IP; therefore, internal error-checking will not be performed. If an incorrect IP address is supplied, throughput may be affected.
- **sds_only**: Communications are enabled only between this SDS and other SDS and MDM components.
- **all (default)**: Communications are enabled with all components:

You can define a role for every IP address, or use the default for all of them. A situation where all IP addresses are either **sdc_only** or **sds_only** is not valid. Each SDS must have one of the following:

- At least one IP address with the role **all**
or
- Two IP addresses with the roles **sdc_only** and **sds_only**

IP roles can be configured when adding an SDS, by adding a new IP address to an SDS, or by editing a current IP role.

add_sds_ip

Add an IP address to an existing SDS.

Syntax

```
scli --add_sds_ip (--sds_id <ID> | --sds_name <NAME> | --sds_ip
<IP> [--sds_port <PORT>]) --new_sds_ip <IP>
[--sds_ip_role {sdc_only | sds_only | all}]
```

Parameters

--sds_id <ID>
SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>
 SDS IP address

--sds_port <PORT>
 Port number on the server to be associated with the SDS

--new_sds_ip <IP>
 New IP address to be associated with the SDS

--sds_ip_role {sdc_only | sds_only | all}
 The IP role assigned to each SDS IP address: SDC only, SDS only, or all (the default). When adding multiple IP addresses, use a comma-separated list for IP roles, with no space after the commas.

Example

```
scli --mdm_ip 192.168.1.200 --add_sds_ip --sds_ip 192.168.1.4 --
new_sds_ip 192.168.1.24
```

disable_sds_rmcache

Disable Read RAM Cache on the specified SDS.

Syntax

```
scli --disable_sds_rmcache ((--sds_id <ID> | --sds_name <NAME> | --
sds_ip <IP> [--sds_port <PORT>]) | (--protection_domain_id <ID> | --
protection_domain_name <NAME>))
[--i_am_sure]
```

Parameters

--sds_id <ID>
 SDS ID

--sds_name <NAME>
 SDS name

--sds_ip <IP>
 SDS IP address

--sds_port <PORT>
 Port assigned to the SDS

--protection_domain_id <ID>
 Protection Domain ID

--protection_domain_name <NAME>
 Protection Domain name

--i_am_sure
 Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Example

```
scli --disable_sds_rmcache --sds_name sds23 --
protection_domain_name pd01
```

Note

To disable the Read RAM Cache for all SDSs in a Protection Domain using a single command, add the relevant Protection Domain name or ID to the `--disable_sds_rmcache` command. For example:

```
scli --disable_sds_rmcache --sds_ip 10.100.5.25 --protection_domain pd25
```

enable_sds_rmcache

Enable Read RAM Cache on the specified SDS.

For a read to be stored in the RAM of a specific SDS, the Read RAM Cache feature on that SDS must be enabled, and the relevant Storage Pool and the relevant volume must both be configured to use Read RAM Cache. Caching will only begin after one or more devices are added to the SDS.

Syntax

```
scli --enable_sds_rmcache ((--sds_id <ID> | --sds_name <NAME> | --
sds_ip <IP> [--sds_port <PORT>]) | (--protection_domain_id <ID> | --
protection_domain_name <NAME>))
[--i_am_sure]
```

Parameters

`--sds_id <ID>`

SDS ID

`--sds_name <NAME>`

SDS name

`--sds_ip <IP>`

SDS IP address

`--sds_port <PORT>`

Port assigned to the SDS

`--protection_domain_id <ID>`

Protection Domain ID

`--protection_domain_name <NAME>`

Protection Domain name

`--i_am_sure`

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Example

```
scli --enable_sds_rmcache --sds_ip 10.100.5.25 --
protection_domain_name pd01
```

Note

To enable Read RAM Cache for all SDSs in a Protection Domain using a single command, add the relevant Protection Domain name or ID to the `--enable_sds_rmcache` command. For example:

```
scli --enable_sds_rmcache --sds_ip 10.100.5.25 --protection_domain pd25
```

modify_sds_ip_role

Modify the role of an SDS's IP address. The IP address can be used for SDC only, SDS only, or both.

Syntax

```
scli --modify_sds_ip_role (--sds_id <ID> | --sds_name <NAME> | --
sds_ip <IP> [--sds_port <PORT>]) [--sds_ip_to_modify <IP>] --
new_sds_ip_role {sdc_only | sds_only | all}
```

Parameters

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port assigned to the SDS

--sds_ip_to_modify <IP>

IP address of the SDS being modified

--new_sds_ip_role {sdc_only | sds_only | all}

New role to assign the SDS IP: SDC only, SDS only, or all

Example

```
scli --modify_sds_ip_role --sds_name sds01 --sds_ip_to_modify
192.168.1.4 --new_sds_ip_role all
```

modify_sds_port

Modify the port used by the SDS for communication purposes.

Syntax

```
scli --modify_sds_port (--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) --new_sds_port <PORT>
```

Parameters

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port associated with the SDS

--new_sds_port <PORT>

New port to be associated with the SDS

Example

```
scli --mdm_ip 192.168.1.200 --modify_sds_port --sds_ip 192.168.1.4 --new_sds_port 6801
```

query_all_sds

Retrieve information about all SDSs in the system.

Syntax

```
scli --query_all_sds
```

Parameters

None.

Example

```
scli --mdm_ip 192.168.1.200 --query_all_sds
```

query_network_latency_meters

Retrieve the network latency meters for the specified SDS.

The SDS maintains statistics about network messages. This command retrieves the network average I/O size and average latency.

Syntax

```
scli --query_device_latency_meters (--sds_id <ID> | --sds_name
<NAME> | --sds_ip <IP> [--sds_port <PORT>])
```

Parameters

--sds_id <ID>
 SDS ID

--sds_name <NAME>
 SDS name

--sds_ip <IP>
 SDS IP address

--sds_port <PORT>
 Port associated with the SDS

Example

```
scli --mdm_ip 192.168.1.200 --query_network_latency_meters --sds_ip
192.168.1.5
```

query_sdc_to_sds_disconnections

Retrieve information regarding any SDC-SDS disconnections.

Syntax

```
scli --query_sdc_to_sds_disconnections
```

Parameters

None.

Example

```
scli --query_sdc_to_sds_disconnections
```

query_sds

Retrieve detailed information about the specified SDS.

Syntax

```
scli --query_sds (--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP>
[--sds_port <PORT>]) [--show_oscillating_failures]
```

Parameters

--sds_id <ID>
 SDS ID

--sds_name <NAME>
 SDS name

--sds_ip <IP>
 SDS IP address

--sds_port <PORT>
 Port associated with the SDS

Example

```
scli --mdm_ip 192.168.1.200 --query_sds --sds_ip 192.168.1.6
```

query_sds_connectivity_status

Retrieve information regarding the connectivity status of the SDSs in the specified Protection Domain.

Syntax

```
scli --query_sds_connectivity_status (--protection_domain_id <ID> |
--protection_domain_name <NAME>)
```

Parameters

--protection_domain_id <ID>
 Protection Domain ID

--protection_domain_name <NAME>
 Protection Domain name

Example

```
scli --query_sds_connectivity_status --protection_domain_name pd_18
```

query_sds_network_test_results

Retrieve the results of the last network test performed between an SDS and its peers.

Syntax

```
scli --query_sds_network_test_results (--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>])
```

Parameters

- sds_id <ID>**
SDS ID
- sds_name <NAME>**
SDS name
- sds_ip <IP>**
SDS IP address
- sds_port <PORT>**
Port associated with the SDS

Example

```
scli --mdm_ip 192.168.1.200 --query_sds_network_test_results --sds_ip 192.168.1.4
```

remove_sds

Initiate the removal of an SDS. The command removes an SDS object and disconnects the SDS from the MDM.

You can remove an SDS at any time, with no downtime required. During execution of this command, the associated data is replicated to different nodes. Therefore, the removal process is asynchronous and might take a long time.

Note

If the capacity of this SDS is still used by volumes, and the capacity cannot be replaced due to lack of available free space, the command will fail.

Syntax

```
scli --remove_sds_ip (--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>])
```

Parameters

- sds_id <ID>**
ID of the SDS to remove
- sds_name <NAME>**

Name of the SDS to remove

--sds_ip <IP>

IP address of the SDS to remove

--sds_port <PORT>

Port associated with the SDS

Example

```
scli --mdm_ip 192.168.1.200 --remove_sds --sds_ip 192.168.1.4
```

Related operations

The removal operation runs in the background. To track its progress, run the `query_all_sds` command periodically.

To abort the removal, run the `abort_remove_sds` command.

remove_sds_ip

Remove an IP address from an SDS.

Possible scenarios for using this command are:

- In ScaleIO setups that include an SDS installed on a server with more than one NIC (network interface card), you might want to divert the usage of one of the NICs to a different purpose.
- An IP range may have changed. For example, an SDS may be using an IP address in a certain range, but the IP range has been changed to a different one in order to free up the previously used addresses.

Syntax

```
scli --remove_sds_ip (--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) --sds_ip_to_remove <IP>
```

Parameters

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port associated with the SDS

--sds_ip_to_remove <IP>

IP address to remove from the SDS

Example

```
scli --mdm_ip 192.168.1.200 --remove_sds_ip
--sds_ip 192.168.1.4 --sds_ip_to_remove 192.168.1.24
```

rename_sds

Assign a new name to the specified SDS.

Syntax

```
scli --rename_sds (--sds_id <ID> | --sds_name <NAME> | --sds_ip
<IP> [--sds_port <PORT>]) --new_name <NAME>
```

Parameters

- sds_id <ID>**
SDS ID
- sds_name <NAME>**
SDS name
- sds_ip <IP>**
SDS IP address
- sds_port <PORT>**
Port associated with the SDS
- new_name <NAME>**
New, unique name to assign to the specified SDS

Example

```
scli --mdm_ip 192.168.1.200 --rename_sds --sds_ip 192.168.1.4 --
new_name sds_new_name
```

SDS names

Assign the SDS a meaningful name in order to facilitate future object identification. The name should conform to the following rules:

1. Contains fewer than 32 characters
2. Contains only alphanumeric and punctuation characters
3. Is unique within the object type

set_drl_properties

Set the properties of the dirty-region-logging used by one or all SDSs.

Syntax

```
scli --set_drl_properties ((--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port <PORT>]) | --set_all) (--memory_only | --hardened)
```

Parameters

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port associated with the SDS

--set_all

Apply the properties to all SDSs. Overrides previous settings

--memory_only

Dirty-region-logging information will be stored in memory only. This is the default.

--hardened

Dirty-region-logging information will be stored both in memory and on disk.

Example

```
scli --set_drl_properties --sds_ip 192.168.1.4 --hardened
```

set_sds_network_limits

Limit the network bandwidth used by all the SDSs in the specified Protection Domain for various traffic types, including I/O.

SDS nodes transfer data among themselves. This data consists of user-data being replicated as part of the RAID protection, and data copied for internal rebalancing and recovery from failures.

You can modify the balance between these types of data loads by limiting the data copy bandwidth. This change affects all SDSs in the specified Protection Domain.



Contact Dell EMC Support before you modify this configuration.

Syntax

```
scli --set_sds_network_limits (--protection_domain_id <ID> | --
protection_domain_name <NAME>)
[--rebuild_limit <LIMIT>] [--rebalance_limit <LIMIT>] [--
overall_limit <LIMIT>]
[--i_am_sure]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--rebuild_limit <LIMIT>

Limit the network bandwidth for rebuild in MB/s. 0 is unlimited

--rebalance_limit <LIMIT>

Limit the network bandwidth for rebalance in MB/s. 0 is unlimited

--overall_limit <LIMIT>

Limit the overall network bandwidth in MB/s. This includes the rebuild, rebalance, and application I/O bandwidth. 0 is unlimited

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Example

```
scli --mdm_ip 192.68.1.200 --set_sds_network_limits --
protection_domain_name pd1 --rebuild_limit 100
```

set_sds_rmcache_size

Set the Read RAM Cache size of the specified SDS.

By default, Read RAM Cache size is set to 128 MB in all SDSs. The amount of RAM you can allocate for cache is limited by the amount of RAM on the SDS server:

- If the RAM is less than 32 GB, 50 percent of memory can be used for cache.
- If the RAM is more than 32 GB, 75 percent of memory can be used for cache.

The maximum amount of RAM cache is 128 GB.

Note

In cases of NUMA (Non-Uniform Memory Access), the total RAM refers to the first node only.

Syntax

```
scli --set_sds_rmcache_size ((--sds_id <ID> | --sds_name <NAME> | --
sds_ip <IP> [--sds_port <PORT>]) | (--protection_domain_id <ID> | --
protection_domain_name <NAME>)) --rmcache_size_mb <SIZE>
[--i_am_sure]
```

Parameters

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port associated with the SDS

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--rmcache_size_mb <SIZE>

New size of Read RAM Cache in MB. Range: 128 MB-300 GB.

Note

For additional information on the maximum limit, see the *ScaleIO User Guide*.

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Example

```
scli --set_sds_rmcache_size --protection_domain_name pd01 --
sds_name sds10 --rmcache_size_mb 256
```

show_certificate

Display the certificate properties for the SDS.

Syntax

```
scli --show_certificate ((--sds_id <ID> | --sds_name <NAME> | --
sds_ip <IP> [--sds_port <PORT>]) | (--protection_domain_id <ID> | --
protection_domain_name <NAME>) | --all_sds)
[--days_until_expiration <DAYS>]
```

Parameters

```
--sds_id <ID>
    SDS ID

--sds_name <NAME>
    SDS name

--sds_ip <IP>
    SDS IP address

--sds_port <PORT>
    Port associated with the SDS

--protection_domain_id <ID>
    Protection Domain ID

--protection_domain_name <NAME>
    Protection Domain name

--all_sds
    Show certificates for all SDSs.

--days_until_expiration <DAYS>
    Only show certificates expiring within a given number of days.
```

Example

```
scli --show_certificate --all_sds --days_until_expiration 7
```

start_sds_network_test

Initiate a network test between an SDS and all of its peers.

Syntax

```
scli --start_sds_network_test (--sds_id <ID> | --sds_name <NAME> |
--sds_ip <IP> [--sds_port <PORT>])
[--parallel_messages <NUMBER>]
[--network_test_size_gb <SIZE>]
[--network_test_length_secs <SECONDS>]
```

Parameters

```
--sds_id <ID>
    SDS ID

--sds_name <NAME>
    SDS name

--sds_ip <IP>
    SDS IP address

--sds_port <PORT>
    Port associated with the SDS
```

--parallel_messages <NUMBER>

Number of parallel messages sent during the test. Range is 1 - 16. Default: 4.

--network_test_size_gb <SIZE>

Amount of data sent between the tested SDS and every other SDS. Default size: 1 GB.

--network_test_length_secs <SECONDS>

Maximum amount of time spent testing the SDS, regardless of the number of SDSs in the system. Default value: 0 (unlimited).

Example

```
scli --mdm_ip 192.168.1.200 --start_sds_network_test
--sds_ip 192.168.1.4 --parallel_messages 8 --network_test_size_gb 2
--network_test_length_secs 120
```


CHAPTER 10

Storage Pool Commands

This section contains commands for managing Storage Pools.

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add_storage_pool

Add a Storage Pool to a Protection Domain.

A Storage Pool is a group of storage devices within a Protection Domain. Each time that you add devices to the system, you must map them to a Storage Pool. Create Storage Pools before you start adding SDSs and storage devices to the system. You can modify Storage Pools post-installation using all management clients, with the exception of OpenStack.

Note

To use the replication feature via RecoverPoint, ensure that zero padding is enabled on the Storage Pool to be replicated before you add any devices to it. Replication support is version-specific. For more information, see the EMC Simple Support Matrix.

Syntax

```
scli --add_storage_pool (--protection_domain_id <ID> | --
protection_domain_name <NAME>)
[--storage_pool_name <NAME>]
[--enable_checksum | --disable_checksum]
[--use_rmcache | --dont_use_rmcache]
[--rmcache_write_handling_mode {cached | passthrough}]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Name to be associated with the new Storage Pool

--enable_checksum

Enable the checksum protection.

--disable_checksum

Disable the checksum protection.

--use_rmcache

Use Read RAM Cache on all SDSs in the Storage Pool. You can change this setting later on specific SDSs (they can be individually configured not to use Read RAM Cache). For more information, see the User Guide.

--dont_use_rmcache

Do not use Read RAM Cache on any SDSs in the Storage Pool (default)

--rmcache_write_handling_mode {cached | passthrough}

Determines whether the system stores the data of this Storage Pool's writes in the SDS Read RAM Cache, or not. The default is to store the write data in cache

(cached). You can change this setting later, using the command `set_rmcache_write_handling_mode`.

Note

Only I/Os that are multiples of 4k bytes can be cached.

Example

```
scli --add_storage_pool --protection_domain_name pd1 --
storage_pool_name sp2 --dont_use_rmcache
```

Storage Pool names

Assign each Storage Pool a meaningful name. When a name has not been defined, the system may display default system-defined names that use the Storage Pool's IDs.

Each volume name should conform to the following rules:

1. Contains fewer than 32 characters
 2. Contains only alphanumeric and punctuation characters
 3. Is unique within the object type
-

Note

ScaleIO objects are assigned a unique ID that can be used to identify the object in CLI commands. You can retrieve the ID via a query or through the object's property sheet in the GUI.

disable_background_device_scanner

Disable the background device scanner on the specified Storage Pool.

Syntax

```
scli --disable_background_device_scanner (((--protection_domain_id
<ID> | --protection_domain_name <NAME>) --storage_pool_name <NAME>)
| --storage_pool_id <ID>)
```

Parameters

- protection_domain_id <ID>**
Protection Domain ID
- protection_domain_name <NAME>**
Protection Domain name
- storage_pool_name <NAME>**
Storage Pool name
- storage_pool_id <ID>**
Storage Pool ID

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --disable_background_device_scanner --protection_domain_name
pd120 --storage_pool_name sp180
```

enable_background_device_scanner

Enable the background device scanner on the devices in the specified Storage Pool to check for errors.

Syntax

```
scli --enable_background_device_scanner (((--protection_domain_id
<ID> | --protection_domain_name <NAME>) --storage_pool_name <NAME>)
| --storage_pool_id <ID>) --scanner_mode {device_only |
data_comparison}
[--scanner_bandwidth_limit <LIMIT>]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

--scanner_mode

Sets the scanner mode of operation:

device_only

Perform read operations. Fix from peer on errors.

data_comparison

Perform the `device_only` test, and compare the data content with peer.
To use this option, zero padding must be enabled.

--scanner_bandwidth_limit <LIMIT>

Bandwidth limit per device in KBps. The value should be in the range of 10 KB to 10 MB. Default: 1 MB.

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --enable_background_device_scanner --protection_domain_name
pd120 --storage_pool_name sp18 --scanner_mode device_only --
scanner_bandwidth_limit 2000 --mdm_port 6611r --
protection_domain_name pd120 --storage_pool_name sp18 --
scanner_mode device_only --scanner_bandwidth_limit 2000
```

Errors

To check for errors detected by the background device scanner, query SDSs using the `--query_sds` command. Error information is provided in event reports. For more information about viewing events, see the *ScaleIO User Guide*.

Bandwidth limits

High bandwidth may create negative impact on system performance and should be used carefully and in extreme cases only—for example, when there is an urgent need to check certain devices. When setting the background device scanner bandwidth, you should take into account the maximum bandwidth of the devices.

modify_zero_padding_policy

Modify the zero padding policy for the Storage Pool.

Note

To use the replication feature via RecoverPoint, ensure that zero padding is enabled on the Storage Pool to be replicated before you add any devices to it. Replication support is version-specific. For more information, see the EMC Simple Support Matrix.

Syntax

```
scli --modify_zero_padding_policy (((--protection_domain_id <ID> |
--protection_domain_name <NAME>) --storage_pool_name <NAME>) | --
storage_pool_id <ID>) (--enable_zero_padding | --
disable_zero_padding)
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

--storage_pool_name <NAME>
Storage Pool name

--storage_pool_id <ID>
Storage Pool ID

--enable_zero_padding
Enable zero padding in this Storage Pool

--disable_zero_padding
Disable zero padding in this Storage Pool

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --modify_zero_padding_policy --protection_domain_name pd10 --
storage_pool_name sp1 --zero_padding_disabled
```

query_storage_pool

Retrieve aggregated information about all objects in the specified Storage Pool.

Syntax

```
scli --query_storage_pool (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) |--
storage_pool_id <ID>)
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

--storage_pool_name <NAME>
Storage Pool name

--storage_pool_id <ID>
Storage Pool ID

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --mdm_ip 192.168.1.200 --query_storage_pool --
protection_domain_name rack_1.1 --storage_pool_name sp_1.1_rack_1.1
```

remove_storage_pool

Remove a Storage Pool from a Protection Domain.

Note

Each Protection Domain must contain at least one Storage Pool, which can be either the default or a user-defined Storage Pool. You can only remove all Storage Pools from a Protection Domain if they are empty and do not contain any devices.

Syntax

```
scli --remove_storage_pool (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) | --
storage_pool_id <ID>)
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

--storage_pool_name <NAME>
Storage Pool name

--storage_pool_id <ID>
Storage Pool ID

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --mdm_ip 192.168.1.200 --remove_storage_pool
--protection_domain_name rack_1.1
--storage_pool_name sp_1.1_rack_1.1
```

rename_storage_pool

Name, or rename, a Storage Pool.

Syntax

```
scli --rename_storage_pool (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) | --
storage_pool_id <ID>) --new_name <NAME>
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

--storage_pool_name <NAME>
Storage Pool name

--storage_pool_id <ID>
Storage Pool ID

--new_name <NAME>
New name to associate with the Storage Pool

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --mdm_ip 192.168.1.200 --rename_storage_pool --
protection_domain_name rack_1.1 --storage_pool_name sp_1.1_rack_1.1
--new_name sp_2.2_rack_1.1
```

Storage Pool names

Assign the Storage Pool a meaningful name in order to facilitate future object identification. The name should conform to the following rules:

1. Contains fewer than 32 characters
2. Contains only alphanumeric and punctuation characters
3. Is unique within the object type

reset_scanner_error_counters

Reset background device scanner error counters for the specified Storage Pool. You can use this command to reset counters for data comparison errors, corrected read errors, or both counter types.

Syntax

```
scli --reset_scanner_error_counters (((--protection_domain_id <ID>
| --protection_domain_name <NAME>) --storage_pool_name <NAME>) |--
storage_pool_id <ID>)
[--reset_data_compare_error_counter]
[--reset_corrected_read_error_counter]
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>
Storage Pool name

--storage_pool_id <ID>
Storage Pool ID

--reset_data_compare_error_counter
Reset the data compare error counter.

--reset_corrected_read_error_counter
Reset the corrected read error counter.

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --reset_scanner_error_counters --protection_domain_name pd120
--storage_pool_name spl20 --reset_data_compare_error_counter
```

set_capacity_alerts_threshold

Set the threshold for triggering capacity usage alerts.

Alerts thresholds are calculated from each Storage Pool capacity after deducting the defined amount of spare capacity. You can set thresholds for a single Storage Pool or for all Storage Pools.

Syntax

```
scli --set_capacity_alerts_threshold --capacity_high_threshold
<PERCENT> --capacity_critical_threshold <PERCENT> (--
all_storage_pools | --system_default | (((--protection_domain_id
<ID> | --protection_domain_name <NAME>) --storage_pool_name <NAME>)
|--storage_pool_id <ID>))
```

Parameters

--capacity_high_threshold <PERCENT>
Threshold of the non-spare capacity of the Storage Pool that will trigger a high-priority alert, expressed as a percentage

--capacity_critical_threshold <PERCENT>
Threshold of the non-spare capacity of the Storage Pool that will trigger a critical-priority alert, expressed as a percentage

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

```

--storage_pool_name <NAME>
    Storage Pool name

--storage_pool_id <ID>
    Storage Pool ID

--all_storage_pools
    Thresholds apply to all Storage Pools

--system_default
    Thresholds apply to newly created Storage Pools

```

Example

```

scli --mdm_ip 192.168.1.200 --set_capacity_alerts_threshold --
system_default --capacity_high_threshold 80 --
capacity_critical_threshold 90

```

set_rebalance_mode

Enable or disable rebalancing of the specified Storage Pool.

⚠ WARNING

Rebalancing is an essential part of the ScaleIO system and should only be disabled temporarily, in special circumstances. Disabling rebalance may cause the system to become unbalanced even if no capacity is added or removed—for example, during recovery from an SDS or device failure.

Syntax

```

scli --set_rebalance_mode (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) | --
storage_pool_id <ID>) (--enable_rebalance | --disable_rebalance)
[--i_am_sure]

```

Parameters

```

--protection_domain_id <ID>
    Protection Domain ID

--protection_domain_name <NAME>
    Protection Domain name

--storage_pool_name <NAME>
    Storage Pool name

--storage_pool_id <ID>
    Storage Pool ID

--enable_rebalance
    Enable rebalancing of the specified Storage Pool.

--disable_rebalance

```

Disable rebalancing of the specified Storage Pool.

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --set_rebalance_mode --protection_domain_name pd10 --
storage_pool_name sp20 --enable_rebalance
```

set_rebalance_policy

Set the rebalance I/O priority policy for a Storage Pool. This feature affects system performance and should only be modified by advanced users.

Syntax

```
scli --set_rebalance_policy (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) | --
storage_pool_id <ID>) --policy <POLICY> (Options)
[--i_am_sure]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

--policy <POLICY>

Policy to use for rebalance I/O priority. Can be one of the following:

no_limit

Rebalance I/Os are not limited.

limit_concurrent_io

Limit the number of allowed concurrent rebalance I/Os to the value defined for `concurrent_io_limit` (the default).

favor_application_io

Limit the number and bandwidth of rebalance I/Os when application I/Os are in progress. This is the default.

dynamic_bandwidth_throttling

Limit the number and bandwidth of rebalance I/Os when application I/Os are in progress or have been in a defined quiet period.

Options

Choose one or several:

--concurrent_io_limit <LIMIT>

The maximum number of concurrent rebalance I/Os per device. Default: 1.

--bandwidth_limit <BANDWIDTH>

The maximum bandwidth of rebalance I/Os, in KB/s, per device. The valid range is 1024-1048576. Default: 10,240. This property will take effect only if the policy is set to `favor_application_io` or `dynamic_bandwidth_throttling`.

--quiet_period <PERIOD>

If the application I/Os are below the IOPS and bandwidth threshold during this period, defined in milliseconds, no throttling will be applied to the rebalance I/Os. Default: 2000. This property will take effect only if policy is set to `dynamic_bandwidth_throttling`.

--application_iops_threshold <THRESHOLD>

The application IOPS threshold above which rebalance I/O throttling will be applied. Default: 10. This property will take effect only if policy is set to `dynamic_bandwidth_throttling`.

--application_bandwidth_threshold <THRESHOLD>

The application I/O bandwidth threshold, in KB/s, above which rebalance I/O throttling will be applied. Default: 10,240. This property will take effect only if policy is set to `dynamic_bandwidth_throttling`.

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --set_rebalance_policy --protection_domain_name pd1 --
storage_pool_name spl --policy favor_application_io --
bandwidth_limit 5120
```

set_rebuild_mode

Enable or disable rebuilds in the specified Storage Pool.

WARNING

Rebuilds are an essential part of the ScaleIO system and should only be disabled temporarily, in special circumstances. If rebuilds are disabled, redundancy will not be restored after failures.

Syntax

```
scli --set_rebuild_mode (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) |--
storage_pool_id <ID>) (--enable_rebuild | --disable_rebuild)
[--i_am_sure]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

--enable_rebuild

Enable rebuilds in the specified Storage Pool.

--disable_rebuild

Disable rebuilds in the specified Storage Pool.

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --set_rebuild_mode --protection_domain_name pd10 --
storage_pool_name sp20 --enable_rebuild
```

set_rebuild_policy

Set the rebuild I/O priority policy for a Storage Pool. This feature affects system performance and should only be modified by advanced users.

Syntax

```
scli --set_rebuild_policy (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) |--
storage_pool_id <ID>) --policy <POLICY> (Options)
[--i_am_sure]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

--policy <POLICY>

Policy to use for rebuild I/O priority. Can be one of the following:

no_limit

Rebuild I/Os are not limited.

limit_concurrent_io

Limit the number of allowed concurrent rebuild I/Os to the value defined for `concurrent_io_limit` (the default).

favor_application_io

Limit the number of allowed concurrent rebuild I/Os to the value defined for `concurrent_io_limit`. If application I/Os are in progress, limit the bandwidth of rebuild I/Os to the value defined for `bandwidth_limit`.

dynamic_bandwidth_throttling

Always limit the number of allowed concurrent rebuild I/Os to the value defined for `concurrent_io_limit`. In addition, limit rebuild I/O bandwidth to the value defined for `bandwidth_limit` in cases where application I/Os have exceeded either the `application_iops_threshold` or `application_bandwidth_threshold` value during the period defined for `quiet_period`.

Options

Choose one or several:

--concurrent_io_limit <LIMIT>

The maximum number of concurrent rebuild I/Os per device. Default: 1.

--bandwidth_limit <BANDWIDTH>

The maximum bandwidth of rebuild I/Os, in KB/s, per device. The valid range is 1024-1048576. Default: 10,240. This property will take effect only if the policy is set to `favor_application_io` or `dynamic_bandwidth_throttling`.

--quiet_period <PERIOD>

If the application I/Os are below the IOPS and bandwidth threshold during this period, defined in milliseconds, rebuild I/Os will be limited to the number of allowed concurrent rebuild I/Os defined for `concurrent_io_limit`. This property will take effect only if policy is set to `dynamic_bandwidth_throttling`.

--application_iops_threshold <THRESHOLD>

The application IOPS threshold above which rebuild I/O throttling will be applied. Default: 10. This property will take effect only if policy is set to `dynamic_bandwidth_throttling`.

--application_bandwidth_threshold <THRESHOLD>

The application I/O bandwidth threshold, in KB/s, above which rebuild I/O throttling will be applied. Default: 10,240. This property will take effect only if policy is set to `dynamic_bandwidth_throttling`.

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --set_rebuild_policy --protection_domain_name pd1 --
storage_pool_name sp1 --policy favor_application_io --
bandwidth_limit 5120
```

set_rebuild_rebalance_parallelism

Set the maximum number of concurrent rebuild and rebalance activities on all SDSs within the specified Storage Pool.

Syntax

```
scli --set_rebuild_rebalance_parallelism (((--protection_domain_id
<ID> | --protection_domain_name <NAME>) --storage_pool_name <NAME>)
|--storage_pool_id <ID>) (--limit <LIMIT>)
```

Parameters**--protection_domain_id <ID>**

Protection Domain ID

```

--protection_domain_name <NAME>
    Protection Domain name

--storage_pool_name <NAME>
    Storage Pool name

--storage_pool_id <ID>
    Storage Pool ID

--limit <LIMIT>
    The maximum number of concurrent rebuild and rebalance activities (1..10) on
    SDSs in the Storage Pool.

```

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```

scli --set_rebuild_rebalance_parallelism --protection_domain_name
pd_18 --storage_pool_name flash_18 --limit 5

```

set_rmcache_usage

Control the use of Read RAM Cache in the specified Storage Pool.

When using Read RAM Cache, you must also enable caching in each SDS in the Storage Pool using the `enable_sds_rmcache` command. Caching only begins once devices have been added to the SDSs.

Note

You can configure Read RAM Cache for a Storage Pool and then disable caching on one or more SDSs individually.

Syntax

```

scli --set_rmcache_usage (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) |--
storage_pool_id <ID>) (--use_rmcache | --dont_use_rmcache)
[--i_am_sure]

```

Parameters

```

--protection_domain_id <ID>
    Protection Domain ID

--protection_domain_name <NAME>
    Protection Domain name

--storage_pool_name <NAME>
    Storage Pool name

--storage_pool_id <ID>

```


Storage Pool ID

--use_rmcache

Use Read RAM Cache in the Storage Pool.

--dont_use_rmcache

Do not use Read RAM Cache in the Storage Pool (the default).

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --set_rmcache_usage --protection_domain_name pd10 --
storage_pool_name spflash --use_rmcache
```

set_rmcache_write_handling_mode

Set the Read RAM Cache write handling mode of the specified Storage Pool. Writes typically skip the cache, but in certain circumstances you may want to cache writes, as well as reads.

Syntax

```
scli --set_rmcache_write_handling_mode (((--protection_domain_id
<ID> | --protection_domain_name <NAME>) --storage_pool_name <NAME>)
|--storage_pool_id <ID>) --rmcache_write_handling_mode {passthrough
| cached}
[--i_am_sure]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

--rmcache_write_handling_mode {passthrough | cached}

The write-handling mode used by the Read RAM Cache. One of:

passthrough

Writes skip the cache and are stored in storage only.

cached

Writes are stored in both cache and storage (the default).

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --set_rmcache_write_handling_mode --protection_domain_name pd1  
--storage_pool_name spflash --rmcache_write_handling_mode cached
```

CHAPTER 11

System Commands

This section contains commands for managing the system.

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abort_upgrade

Stop an upgrade that is in process.

Syntax

```
scli --abort_upgrade
[--use_nonsecure_communication]
```

Parameters

--use_nonsecure_communication

Allow SCLI commands to be executed when secure communication mode is not enabled. This is necessary when the base system does not use secure communication mode—for example ScaleIO v1.32.x.

Example

```
scli --abort_upgrade --use_nonsecure_communication
```

add_certificate

Add a Certificate Authority (CA) signed certificate to the CLI's Trusted Certificates list. All applied certificates signed by the CA will be trusted automatically by this CLI.

Syntax

```
scli ---add_certificate --certificate_file <FILE>
```

Parameters

--certificate_file <FILE>

File name of the Root or Trusted Certificate

Example

```
scli --add_certificate --certificate_file CAcert-cacert.pem
```

add_standby_mdm

Add a standby MDM to the system.

Syntax

```
scli --add_standby_mdm --mdm_role {manager | tb} --new_mdm_ip
<IP>
  [--new_mdm_port <PORT>]
  [--new_mdm_management_ip <IP>]
  [--new_mdm_virtual_ip_interface <INTF>]
  [--new_mdm_name <NAME>]
```

```
[--allow_asymmetric_ips]
[--force_clean]
[--i_am_sure]
```

Designate the standby MDM's role, either manager or Tie Breaker (default). You can give the standby a unique name.

Parameters

--mdm_role {manager | tb}

Designates whether the MDM role is a manager (master of the cluster) or will only serve as a Tie Breaker in the cluster master election process

--new_mdm_ip <IP>

Comma-separated list of up to four IP addresses assigned to the new MDM. Can contain both IPv4 and IPv6 addresses. Omit the space after each comma.

--new_mdm_port <PORT>

Port of the new MDM. Default: 9011.

--new_mdm_management_ip <IP>

Comma-separated list of up to four IP addresses used to manage the MDM. Can contain both IPv4 and IPv6 addresses. Omit the space after each comma.

--new_mdm_virtual_ip_interface <INTF>

Comma-separated list of interface names to be used for the MDM virtual IP addresses. The order of interfaces must match the order of virtual IP addresses assigned to the cluster. Omit the space after each comma.

--new_mdm_name <NAME>

Name of the new MDM

--allow_asymmetric_ips

Allow the added node to have a different number of IP addresses from the primary node.

--force_clean

Clean the previous configuration of the MDM.

--i_am_sure

Skip the safety questions for command execution, and give preemptive approval.

Example

```
scli --add_standby_mdm --mdm_role manager --new_mdm_ip
192.168.1.153 --new_mdm_management_ip 10.103.110.153 --
new_mdm_virtual_ip_interface eth4
```

allow_commands_during_upgrade

Allows cluster commands to be sent during an upgrade for this session.

Syntax

```
scli --allow_commands_during_upgrade  
[--use_nonsecure_communication]
```

Parameters

--use_nonsecure_communication

Allow SCLI commands to be executed when secure communication mode is not enabled. This is necessary when the base system does not use secure communication mode—for example ScaleIO v1.32.x.

Example

```
scli --allow_commands_during_upgrade --use_nonsecure_communication
```

approve_all_mdm_certificates

Approve all MDM cluster certificates.

The command displays all MDM cluster certificates to be approved, one at a time. If there is a connection problem with a node, or a certificate is not approved, the process stops.

Syntax

```
scli --approve_all_mdm_certificates
```

Example

```
scli --approve_all_mdm_certificates
```

assign_ldap_groups_to_roles

Map LDAP groups to ScaleIO system roles.

The LDAP service must be configured before using this command. Once you have mapped the roles, you can assign users in the Active Directory to the relevant LDAP groups.

Note

To enable LDAP users to use the ScaleIO GUI or vSphere Plug-in, you must assign all LDAP groups the Monitor role.

Syntax

```
scli --assign_ldap_groups_to_roles (--ldap_service_id
<LDAP_SERVICE_ID> | --ldap_service_name <LDAP_SERVICE_NAME>)
[--administrator_role_dn]
[--security_role_dn]
[--backend_config_role_dn]
[--frontend_config_role_dn]
[--monitor_role_dn]
[--allow_overwrite]
```

Parameters

--ldap_service_id <LDAP_SERVICE_ID>

ID of the LDAP service

--ldap_service_name <LDAP_SERVICE_NAME>

Name of the LDAP service

--administrator_role_dn

LDAP group that has users with administration privileges

--security_role_dn

LDAP group that has users with security privileges

--backend_config_role_dn

LDAP group that has users with backend configuration privileges

--frontend_config_role_dn

LDAP group that has users with frontend configuration privileges

--monitor_role_dn

LDAP group that has users with monitoring privileges

--allow_overwrite

Overwrites the role's LDAP group

Example

```
scli --assign_ldap_groups_to_roles --ldap_service_id
0xAABBCCDDEEFF0011 --administrator_role_dn
"CN=SIO_GRP_1,OU=SIO_OU_1,DC=ldaps,DC=ecme,DC=com" --
monitor_role_dn "CN=SIO_GRP_2,OU=SIO_OU_1,DC=ldaps,DC=ecme,DC=com"
```

create_mdm_cluster

Create an MDM cluster from the selected Master MDM.

This command does not require the user to be logged in before running it. When the command is executed, the MDM cluster operates in single mode.

Syntax

```
scli --create_mdm_cluster --master_mdm_ip <IP>
[--master_mdm_management_ip <IP>]
[--cluster_virtual_ip <IP>]
```

```
[--master_mdm_virtual_ip_interface <INTF>]
[--master_mdm_name <NAME>]
[--accept_license]
[--disable_client_secure_communication]
[--approve_certificate]
```

Parameters

--master_mdm_ip <IP>

Comma-separated list of IP addresses assigned to the Master MDM, to be used for MDM cluster internal control communications. Omit the space after each comma.

--master_mdm_management_ip <IP>

Comma-separated list of IP addresses, used to manage the MDM. Omit the space after each comma.

--cluster_virtual_ip <IP>

Comma-separated list of virtual IP addresses to be used for the cluster. Omit the space after each comma.

--master_mdm_virtual_ip_interface <INTF>

Comma-separated list of interface names to be used for the MDM virtual IP addresses. The order of interfaces must match the order of the virtual IP addresses assigned to the cluster. Omit the space after each comma.

--master_mdm_name <NAME>

MDM name. Each MDM name must be unique. Ensure that each server on which the MDM is installed has a unique hostname.

--accept_license

Accept the license agreement.

--disable_client_secure_communication

Create the cluster without management client secure communications.

--approve_certificate

Preemptive approval of the MDM certificate

Example

```
scli --create_mdm_cluster --master_mdm_ip 192.168.1.152 --
cluster_virtual_ip 192.168.100.152 --
master_mdm_virtual_ip_interface eth4
```

enter_maintenance_mode

Place one or more SDSs in maintenance mode.

Syntax

```
scli --enter_maintenance_mode ((--sds_id <ID> | --sds_name <NAME> |
--sds_ip <IP> [--sds_port <PORT>]) | (--fault_set_id <ID> | (--
protection_domain_id <ID> | --protection_domain_name <NAME>) --
```



```

fault_set_name <NAME>)))
[--force_insufficient_spare_or_free_space]
[--force_degraded_or_failed_data]

```

Parameters

```

--sds_id <ID>
    SDS ID

--sds_name <NAME>
    SDS name

--sds_ip <IP>
    SDS IP address

--sds_port <PORT>
    Port assigned to the SDS

--fault_set_id <ID>
    Fault Set ID

--protection_domain_id <ID>
    Protection Domain ID

--protection_domain_name <NAME>
    Protection Domain name

--fault_set_name <NAME>
    Fault Set name

--force_insufficient_spare_or_free_space
    Allow entry into maintenance mode, even without enough available capacity.

--force_degraded_or_failed_data
    Allow entry into maintenance mode, even with degraded or failed data.

```

Example

```

scli --enter_maintenance_mode --sds_name sds10 --
force_degraded_or_failed_data

```

exit_maintenance_mode

Cancel maintenance mode for one or more SDSs.

Note

The system displays an error message if you attempt to remove an SDS in Maintenance Mode, ("The task failed since there is an SDS in the Protection Domain currently in Maintenance Mode"). However, you can force an SDS out of Maintenance Mode by using one of the flags, and then removing the SDS.

Syntax

```
scli --exit_maintenance_mode ((--sds_id <ID> | --sds_name <NAME> |
--sds_ip <IP> [--sds_port <PORT>]) | (--fault_set_id <ID> | ((--
protection_domain_id <ID> | --protection_domain_name <NAME>) --
fault_set_name <NAME>)))
[--force_failed_device_id <IDs>]
[--force_failed_sds]
```

Parameters

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port assigned to the SDS

--fault_set_id <ID>

Fault Set ID

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--fault_set_name <NAME>

Fault Set name

--force_failed_device_id <IDs>

Allow exit from maintenance mode, even when the specified devices are in an error state.

--force_failed_sds

Allow exit from maintenance mode, even when an SDS is down.

Note

If you attempt to remove an SDS in maintenance mode, the system displays an error message: The task failed since there is an SDS in the Protection Domain currently in Maintenance Mode. Using the `force_failed_device_id` or `force_failed_sds` flag forces the SDS out of maintenance mode.

Example

```
scli --exit_maintenance_mode --sds_ip 10.76.1.10 --sds_port 7072
```

finalize_upgrade

Finalize the upgrade process.

Syntax

```
scli --finalize_upgrade
[--use_nonsecure_communication]
```

Parameters

--use_nonsecure_communication

Allow SCLI commands to be executed when secure communication mode is not enabled. This is necessary when the base system does not use secure communication mode—for example ScaleIO v1.32.x.

Example

```
scli --finalize_upgrade --use_nonsecure_communication
```

generate_certificate

Generate a new certificate and private key for the SDS. The certificate and key are signed by the system.

Syntax

```
scli --generate_certificate (--sds_id <ID> | --sds_name <NAME> | --
sds_ip <IP>[--sds_port <PORT>])
```

Parameters

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port assigned to the SDS

Example

```
scli --generate_certificate --sds_id e4c62adc00000001
```

generate_mdm_certificate

Create a new self-signed certificate and private key for the specified MDM.

Note

Running this command on the Master MDM causes the MDM to restart. This may cause the MDM to switch ownership.

Syntax

```
scli --generate_mdm_certificate (--target_mdm_id <ID> | --target_mdm_ip <IP> [--target_mdm_port <PORT>] | --target_mdm_name <NAME>)
```

Parameters

- target_mdm_id <ID>**
ID of the MDM for which the certificate and private key are required
- target_mdm_ip <IP>**
IP address of the MDM for which the certificate and private key are required
- target_mdm_port <PORT>**
Port of the MDM for which the certificate and private key are required
- target_mdm_name <NAME>**
Name of the MDM for which the certificate and private key are required

Example

```
scli --generate_mdm_certificate --target_mdm_ip 198.168.1.2 --target_mdm_port 9011
```

generate_mdm_csr_file

Create a CSR (Certificate Signing Request) file for the specified MDM.

The file is used to obtain security certificates from a Certificate Authority and is saved in the specified MDM's directory:

- **Linux:** /opt/emc/scaleio/mdm/cfg
- **Windows:** C:\Program Files\emc\scaleio\mdm\cfg

Syntax

```
scli --generate_mdm_csr_file (--target_mdm_id <ID> | --target_mdm_ip <IP> [--target_mdm_port <PORT>] | --target_mdm_name <NAME>) [OPTIONS]
```

Parameters

- target_mdm_id <ID>**

ID of the MDM for which the certificate and private key are required

`--target_mdm_ip <IP>`

IP address of the MDM for which the certificate and private key are required

`--target_mdm_port <PORT>`

Port of the MDM for which the certificate and private key are required

`--target_mdm_name <NAME>`

Name of the MDM for which the certificate and private key are required

`--common_name <NAME>`

Common name to appear in the CSR. The default is the machine's host name.

Options

Note

If you use any of these options, the default values will be disabled for all of them.

`--country <NAME>`

Country to appear in the CSR

`--state <NAME>`

State to appear in the CSR

`--location <NAME>`

Location to appear in the CSR

`--organization <NAME>`

Organization to appear in the CSR

`--organizational_unit <NAME>`

Organizational unit to appear in the CSR

`--email_address <EMAIL>`

Email address to appear in the CSR

Example

```
scli --generate_mdm_csr_file --target_mdm_ip 192.168.1.2 --
target_mdm_port 9011 --country australia --state victoria --
location melbourne --organization example_pty_ltd --
organizational_unit sales --email_address sales@example.com.au
```

modify_cluster_virtual_ips

Set or modify the virtual IP address of an MDM cluster.

Note

After changing or adding a virtual IP address, you are required to update the SDC with the new virtual IP address. See "Updating SDC parameters" in the *ScaleIO User Guide*.

Syntax

```
scli --modify_cluster_virtual_ips (--cluster_virtual_ip <IP> | --clear_all)
```

Parameters

--cluster_virtual_ip <IP>

Comma-separated list of IP addresses to be used for the cluster. Omit the space after each comma.

--clear_all

Clear all virtual IP addresses.

Example

```
scli --modify_cluster_virtual_ips --cluster_virtual_ip 192.168.100.152,192.168.100.153
```

modify_management_ip

Modify an MDM node's management IP addresses.

If you are using this command to add additional management IP addresses, you must enter all of the existing IP addresses in the command, and add the new ones at the end. Up to four IP addresses are supported.

Syntax

```
scli --modify_management_ip (--new_mdm_management_ip <IP> | --clear_all) (--target_mdm_id <ID> | --target_mdm_ip <IP> [--target_mdm_port <PORT>] | --target_mdm_name <NAME>) [--allow_duplicate_management_ips] [--i_am_sure]
```

Parameters

--new_mdm_management_ip <IP>

Comma-separated list of IP address to be used to manage the MDM. Omit the space after each comma.

--clear_all

Clear all management IP addresses.

--target_mdm_id <ID>

MDM ID

--target_mdm_ip <IP>

MDM IP address

--target_mdm_port <PORT>

MDM port

--target_mdm_name <NAME>

MDM name

--allow_duplicate_management_ips

Allow duplicate management IP addresses.

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Example

```
scli --modify_management_ip --target_mdm_id 0x34e8f1df6c84a410 --
new_mdm_management_ip fd00::192:168:1:17,10.103.110.17
```

Implementing the changes

After modifying MDM IP addresses, ensure that you implement the change in all components and interfaces that are mapped to the MDM:

1. ScaleIO GUI: In the **Login** window, log in using the new IP address, then clear the old IP address from the history if it is now obsolete.
2. REST Gateway and OpenStack: In the REST Gateway, modify the mapping to the new management IP address.
3. On each SDC, perform the following locally, in command line with root access permissions:

- If for any reason, the management IP address is not updated in the SDC, run:

```
/opt/emc/scaleio/sdc/bin/drv_cfg --mod_mdm_ip
```

- If the SDC is mapped to more than one ScaleIO system, run:

```
/opt/emc/scaleio/sdc/bin/drv_cfg --add_mdm
```

4. vSphere: Using the vSphere web plug-in interface, unregister the ScaleIO system and reregister it with the new IP address.

modify_spare_policy

Modify the current spare capacity reservation policy.

To ensure data protection during server failures, ScaleIO reserves 10 percent of its capacity by default, instead of allowing this capacity to be used for volume allocation. To ensure full system protection in the event of a node failure, the spare capacity must be at least equal to the amount of capacity in the node containing the maximum capacity or the maximum Fault Set capacity.

If all nodes contain equal capacity, you should set the capacity value to at least 1/N of the total capacity (where N is the number of SDS nodes).

Syntax

```
scli --modify_spare_policy (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) | --
storage_pool_id <ID>) --spare_percentage <PERCENT>
[--i_am_sure]
```

Parameters

- protection_domain_id <ID>**
Protection Domain ID
- protection_domain_name <NAME>**
Protection Domain name
- storage_pool_name <NAME>**
Storage Pool name
- storage_pool_id <ID>**
Storage Pool ID
- spare_percentage <PERCENT>**
Percentage of the total capacity to be set aside as spare
- i_am_sure**
Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --mdm_ip 192.168.1.200 --modify_spare_policy
--protection_domain_name rack_1.1 --storage_pool_name --
spare_percentage 10
```

modify_virtual_ip_interfaces

Set the virtual IP interfaces of a node in the MDM cluster.

Syntax

```
scli --modify_virtual_ip_interfaces (--new_mdm_virtual_ip_interface
<INTF> | --clear_all) (--target_mdm_id <ID> | --target_mdm_ip <IP>
[--target_mdm_port <PORT>] | --target_mdm_name <NAME>)
```

Parameters

- new_mdm_virtual_ip_interface <INTF>**
Comma-separated list of interface names to be used for the MDM virtual IP interfaces. Omit the space after each comma. The order of interfaces must match the order of virtual IPs assigned to the cluster.
- clear_all**
Clear all virtual IP interfaces.
- target_mdm_id <ID>**
MDM ID


```
--target_mdm_ip <IP>
    MDM IP address

--target_mdm_port <PORT>
    MDM port

--target_mdm_name <NAME>
    MDM name
```

Example

```
scli --modify_virtual_ip_interfaces --target_mdm_ip 192.168.1.152 --
new_mdm_virtual_ip_interface eth4
```

query_all

Retrieve aggregated information about all objects in all Protection Domains.

Syntax

```
scli --query_all
```

Parameters

None.

Example

```
scli --mdm_ip 192.168.1.200 --query_all
```

Sample output

```
# scli --query_all
System Info:
    Product:  DellEMC ScaleIO Version: R2_5.0.232
    ID:       22dee69c4c7ad322
    Manager ID:      0000000000000000

License info:
    Installation ID: 0000000000001234
    SWID:
    Maximum capacity: Unlimited
    Usage time left: Unlimited *** Non-Production License ***
    Enterprise features: Enabled
    The system was activated 23 days ago

System settings:
    Capacity alert thresholds: High: 80, Critical: 90
    Thick volume reservation percent: 0
    MDM restricted SDC mode: guid
    Management Clients secure communication: enabled
    TLS version: TLSv1.2
    CLI preemptive login banner acceptance via shell: enabled
    User authentication method: Native
    SDS connection authentication: Enabled

SDC-SDS connectivity status: All connected
```

```

Query all returned 1 Protection Domain:
Protection Domain pd1 (Id: 0fc55e5500000000) has 3 storage pools, 7
Fault Sets, 7 SDS nodes, 15 volumes and 12.3 TB (12552 GB) available
for volume allocation
Operational state is Active
Rfcache enabled, Mode: Write miss, Page Size 64 KB, Max IO size 128 KB

Storage Pool sp2 (Id: 2elfefd3000000000) has 5 volumes and 4.1 TB
(4184 GB) available for volume allocation
    The number of parallel rebuild/rebalance jobs: 2
    Rebuild is enabled and using Limit-Concurrent-IO policy with
the following parameters:
        Number of concurrent IOs per device: 1
        Rebalance is enabled and using Favor-Application-IO policy
with the following parameters:
        Number of concurrent IOs per device: 1, Bandwidth limit per
device: 10240 KB per second
        Background device scanner: Mode: data_comparison, Bandwidth
Limit 10240 KBps per device
        Zero padding is enabled
        Spare policy: 16% out of total
        Checksum mode: disabled
        Doesn't use RAM Read Cache
        Doesn't use Flash Read Cache
        Capacity alert thresholds: High: 80, Critical: 90

Storage Pool sp1 (Id: 2elfefd4000000001) has 5 volumes and 4.1 TB
(4184 GB) available for volume allocation
    The number of parallel rebuild/rebalance jobs: 2
    Rebuild is enabled and using Limit-Concurrent-IO policy with
the following parameters:
        Number of concurrent IOs per device: 1
        Rebalance is enabled and using Favor-Application-IO policy
with the following parameters:
        Number of concurrent IOs per device: 1, Bandwidth limit per
device: 10240 KB per second
        Background device scanner: Mode: data_comparison, Bandwidth
Limit 10240 KBps per device
        Zero padding is enabled
        Spare policy: 16% out of total
        Checksum mode: enabled
        Uses RAM Read Cache
        RAM Read Cache write handling mode is 'cached'
        Doesn't use Flash Read Cache
        Capacity alert thresholds: High: 80, Critical: 90

Storage Pool sp3 (Id: 2elfefd5000000002) has 5 volumes and 4.1 TB
(4184 GB) available for volume allocation
    The number of parallel rebuild/rebalance jobs: 2
    Rebuild is enabled and using Limit-Concurrent-IO policy with
the following parameters:
        Number of concurrent IOs per device: 1
        Rebalance is enabled and using Favor-Application-IO policy
with the following parameters:
        Number of concurrent IOs per device: 1, Bandwidth limit per
device: 10240 KB per second
        Background device scanner: Mode: data_comparison, Bandwidth
Limit 10240 KBps per device
        Zero padding is enabled
        Spare policy: 16% out of total
        Checksum mode: enabled
        Doesn't use RAM Read Cache
        Doesn't use Flash Read Cache
        Capacity alert thresholds: High: 80, Critical: 90

SDS Summary:
    Total 7 SDS Nodes

```

```

7 SDS nodes have membership state 'Joined'
7 SDS nodes have connection state 'Connected'
57.2 TB (58551 GB) total capacity
24.6 TB (25183 GB) unused capacity
0 Bytes snapshots capacity
23.4 TB (24000 GB) in-use capacity
0 Bytes thin capacity
23.4 TB (24000 GB) protected capacity
0 Bytes failed capacity
0 Bytes degraded-failed capacity
0 Bytes degraded-healthy capacity
0 Bytes unreachable-unused capacity
0 Bytes active rebalance capacity
0 Bytes pending rebalance capacity
0 Bytes active forward-rebuild capacity
0 Bytes pending forward-rebuild capacity
0 Bytes active backward-rebuild capacity
0 Bytes pending backward-rebuild capacity
0 Bytes rebalance capacity
0 Bytes forward-rebuild capacity
0 Bytes backward-rebuild capacity
0 Bytes active moving capacity
0 Bytes pending moving capacity
0 Bytes total moving capacity
9.1 TB (9368 GB) spare capacity
23.4 TB (24000 GB) at-rest capacity
0 Bytes semi-protected capacity
0 Bytes in-maintenance capacity
0 Bytes decreased capacity

Primary-reads                23095 IOPS 180.4 MB
(184760 KB) per-second
Primary-writes                41725 IOPS 326.0 MB
(333804 KB) per-second
Secondary-reads              0 IOPS 0 Bytes per-
second
Secondary-writes            40227 IOPS 314.3 MB
(321817 KB) per-second
Backward-rebuild-reads      0 IOPS 0 Bytes per-
second
Backward-rebuild-writes     0 IOPS 0 Bytes per-
second
Forward-rebuild-reads       0 IOPS 0 Bytes per-
second
Forward-rebuild-writes      0 IOPS 0 Bytes per-
second
Rebalance-reads             0 IOPS 0 Bytes per-
second
Rebalance-writes            0 IOPS 0 Bytes per-
second

Volumes summary:
15 thick-provisioned volumes. Total size: 11.7 TB (12000 GB)

```

Output description

The following tables explain the output for `query_all`.

System Info	
Product	The ScaleIO version of the system
ID	The system ID number
Manager ID	The ID of the management application that controls the MDM

License Info	
Installation ID	The Installation ID number, which is required for licensing purposes
SWID	The SWID number, which is required for licensing purposes
Maximum capacity	The maximum capacity permitted by the system's license
Usage time left	The amount of time left until the license expires
Enterprise features	Indicates whether enterprise features are enabled
The system was activated n days ago	The number of days since the system was activated

System Settings	
Volumes are/are not obfuscated	The obfuscation setting for all volumes in the system. Default: not obfuscated.
Capacity alert thresholds	The alert thresholds, as percentages, currently configured for capacity usage
Thick volume reservation	The amount of capacity, as a percentage, reserved for thick volumes,
MDM restricted SDC mode	Indicates whether users on remote clients are restricted to read-only access: <ul style="list-style-type: none"> enabled: read-only access disabled: full read-write access
Management Clients secure communication	The status of the enabled/disabled
TLS version	
User authentication method	
SDS connection authentication	The status of the : enabled/disabled

Protection Domain	
Protection Domain summary	The following items are displayed separately for each Protection Domain: <ul style="list-style-type: none"> Name ID Number of Storage Pools in the Protection Domain Number of Fault Sets in the Protection Domain Number of SDS nodes in the Protection Domain

Protection Domain	
	<ul style="list-style-type: none"> Number of volumes associated with the Protection Domain Amount of capacity in the Protection Domain that is available for volume allocation
Operational state	Indicates the Protection Domain's current state, such as active, inactive, and so on.
RFcache status	<p>Indicates whether RFcache is enabled/disabled in the Protection Domain. If RFcache is enabled, the following information is displayed:</p> <ul style="list-style-type: none"> Mode: pass-through mode used by the caching feature Page size: cache page size in KB Maximum I/O size: cache maximum I/O size in KB

Storage Pool	
Storage Pool summary	<p>Lists the following information for each Storage Pool:</p> <ul style="list-style-type: none"> Name ID Number of volumes associated with the Storage Pool Amount of capacity in the Storage Pool that is available for volume allocation
The number of parallel rebuild/rebalance jobs	The number of parallel Rebuild and Rebalance jobs currently existing in the system
Rebuild is enabled/disabled	Indicates whether the Rebuild feature is enabled or disabled. (In normal production conditions, Rebuild should be enabled.) When enabled, the Rebuild policy configured in the system is displayed, along with the relevant parameters.
Rebalance is enabled/disabled	Indicates whether the Rebalance feature is enabled or disabled. (In normal production conditions, Rebalance should be enabled.) When enabled, the Rebalance policy configured in the system is displayed, along with the relevant parameters.
Background device scanner	Displays the mode and the bandwidth limit per device
Zero padding is enabled/disabled	Indicates whether zero padding is enabled or disabled

Storage Pool	
Spare policy	The percentage of total capacity reserved as Spare
Read RAM Cache	Indicates whether the Read RAM Cache feature is used in the Storage Pool. If the Read RAM Cache is used, it displays the write handling mode currently in use (passthrough or cached)
Read Flash Cache	Indicates whether Read Flash Cache is used in the Storage Pool
Capacity alert thresholds	The alert thresholds, as percentages, configured for capacity usage. Thresholds may be configured for the entire system, or per Storage Pool.

SDS Summary	
Total	The total number of SDS nodes
<i>n</i> SDS nodes have membership state 'Joined'	The number of SDS nodes that are connected to the cluster, can receive I/O, and hold primary and secondary copies of data. It takes some time from actual disconnection until the SDS is disconnected from the cluster, or the reverse. There are also up-pending and down-pending states.
<i>n</i> SDS nodes have connection state 'Connected'	The number of SDS nodes currently connected to the MDM
<i>x</i> TB (<i>y</i> GB) total capacity	The total amount of available raw storage This does not represent the total capacity available for volume allocation.
<i>x</i> TB (<i>y</i> GB) unused capacity	The quantity of raw capacity in the system that can be earmarked for specific purposes, such as Spare, or used for new volume creation
<i>x</i> Bytes snapshots capacity	The quantity of capacity used for storing snapshots
<i>x</i> TB (<i>y</i> GB) in-use capacity	The total quantity of healthy, degraded, and failed capacity
<i>x</i> Bytes thin capacity	The quantity of capacity currently needed for storage purposes
<i>x</i> TB (<i>y</i> GB) protected capacity	The quantity of capacity that is fully protected (primary and secondary copies of the data exist)
<i>x</i> Bytes failed capacity	The quantity of capacity that is not available at all (neither primary, nor secondary copies)
<i>x</i> Bytes degraded-failed capacity	The quantity of degraded-failed capacity. When an SDS fails, all of its capacity is

SDS Summary	
	defined as degraded-failed, and the secondary copies (which are spread across the Protection Domain) are defined as degraded-healthy.
x Bytes degraded-healthy capacity	The quantity of degraded-healthy capacity. When an SDS fails, all of its capacity is defined as degraded-failed, and the secondary copies (which are spread across the Protection Domain) are defined as degraded-healthy.
x Bytes unreachable-unused capacity	The quantity of capacity not configured for any use type in the system that is currently unavailable
x Bytes active rebalance capacity	The quantity of capacity that is currently being migrated to a different location for load balancing purposes
x Bytes pending rebalance capacity	The quantity of capacity that is waiting in the job queue for migration to a different location for load balancing purposes
x Bytes active forward-rebuild capacity	The quantity of capacity for which one copy of data exists and a second copy is currently being created
x Bytes pending forward-rebuild capacity	The quantity of capacity for which one copy of data exists, and a job for the creation of a second copy is waiting in the job queue
x Bytes active backward-rebuild capacity	The quantity of capacity for which one copy of data went offline and came back online, and changes are currently being synchronized in that copy
x Bytes pending backward-rebuild capacity	The quantity of capacity for which one copy of data went offline and came back online, and changes are waiting in the job queue to be synchronized in that copy
x Bytes rebalance capacity	The total quantity of capacity that is either currently rebalancing or is pending Rebalance
x Bytes forward-rebuild capacity	The total quantity of degraded capacity that is either currently in Forward Rebuild state or is pending Forward Rebuild
x Bytes backward-rebuild capacity	The total quantity of degraded capacity that is either currently in Backward Rebuild state or is pending Backward Rebuild
x Bytes active moving capacity	The quantity of capacity that is currently being migrated from one location to another
x Bytes pending moving capacity	The quantity of capacity that is waiting in the job queue for migration from one location to another

SDS Summary	
x Bytes total moving capacity	The total quantity of active and pending moving (migrating) capacity
x TB (y GB) spare capacity	The quantity of capacity that is reserved for system use when recovery from failure is required. This capacity cannot be used for storage purposes.
x TB (y GB) at-rest capacity	The quantity of capacity that is fully protected and not in a Rebuild or Rebalance state
x Bytes semi-protected capacity	
x Bytes in-maintenance capacity	
x Bytes decreased capacity	The quantity of Decreased capacity that was deducted from devices (using the Set Device Capacity Limit GUI command or <code>modify_sds_device_capacity</code> CLI command) and cannot be used for any purpose
Primary-reads x IOPS y Bytes per second	Number of primary data copy read IOPS, and read bandwidth
Primary-writes x IOPS y Bytes per second	Number of primary data copy write IOPS, and write bandwidth
Secondary-reads x IOPS y Bytes per second	Number of secondary data copy (protection) read IOPS, and read bandwidth
Secondary-writes x IOPS y Bytes per second	Number of secondary copy (protection) write IOPS, and write bandwidth
Backward-rebuild-reads x IOPS y Bytes per second	Number of Backward Rebuild read IOPS, and read bandwidth
Backward-rebuild-writes x IOPS y Bytes per second	Number of Backward Rebuild write IOPS, and write bandwidth
Forward-rebuild-reads x IOPS y Bytes per second	Number of Forward Rebuild read IOPS, and read bandwidth
Forward-rebuild-writes x IOPS y Bytes per second	Number of Forward Rebuild write IOPS, and write bandwidth
Rebalance-reads x IOPS y Bytes per second	Number of Rebalance read IOPS, and read bandwidth
Rebalance-writes x IOPS y Bytes per second	Number of Rebalance write IOPS, and write bandwidth
Volumes summary	
n thick-provisioned volumes	The number of thick-provisioned volumes, and the total size in TB and GB
n volumes mapped to all SDC nodes	The number of volumes mapped to SDC nodes

query_cluster

Retrieve MDM cluster information.

Syntax

```
scli --query_cluster
```

Parameters

None.

Example

```
scli --mdm_ip 192.168.1.200 --query_cluster
```

Sample output

The following is sample output for a five-node cluster:

```
scli --query_cluster
Cluster:
  Mode: 5_node, State: Normal, Active: 5/5, Replicas: 3/3
  Virtual IPs: N/A
Master MDM:
  Name: MDM_159, ID: 0x49a450870a36e1a0
  IPs: 192.168.1.159, Management IPs: 10.226.110.159, Port:
9011, Virtual IP interfaces: N/A
  Version: 2.5.0
Slave MDMs:
  Name: MDM_165, ID: 0x3139c7d745cdcf62
  IPs: 192.168.1.165, Management IPs: 10.226.110.165, Port:
9011, Virtual IP interfaces: N/A
  Status: Normal, Version: 2.5.0
  Name: MDM_164, ID: 0x1730351033e025a1
  IPs: 192.168.1.164, Management IPs: 10.226.110.164, Port:
9011, Virtual IP interfaces: N/A
  Status: Normal, Version: 2.5.0
Tie-Breakers:
  Name: MDM_8, ID: 0x49e3b2e275d29994
  IPs: 192.168.159.8, Port: 9011
  Status: Normal, Version: 2.5.0
  Name: MDM_7, ID: 0x317253801e84ffa3
  IPs: 192.168.159.7, Port: 9011
  Status: Normal, Version: 2.5.0
```

Possible values for items in the sample output

Item	Possible values
Mode	Cluster mode: <ul style="list-style-type: none"> 1_node 3_node 5_node
State	State of the cluster: <ul style="list-style-type: none"> Normal Degraded (one or more cluster members are down or inactive)

Item	Possible values
Active	The number of cluster members that are active. If all members are in normal state, this number equals the number of cluster members.
Replicas	The number of MDM repository holders (the Master MDM, plus the number of Slave MDMs in normal state)
Slave MDM status	<ul style="list-style-type: none"> • Normal • Error • Disconnected • Not synchronized
Tie-breaker status	<ul style="list-style-type: none"> • Normal • Error • Disconnected
Standby MDM	Role (Manager or Tie-Breaker)

query_performance_parameters

Retrieve performance parameters. The output displays the configurations of performance-related parameters for the performance profile that is currently active. When no parameters are added to the command, the name of the active profile is shown.

Syntax

```
scli --query_performance_parameters
  [--sds_id <ID> | --sds_name <NAME> | --sds_ip <IP> [--sds_port
  <PORT>] | --all_sds] [--sdc_id <ID> | --sdc_name <NAME> | --
  sdc_guid <GUID> | --sdc_ip <IP> | --all_sdc]
  [--print_all]
```

Parameters

--sds_id <ID>

SDS ID

--sds_name <NAME>

SDS name

--sds_ip <IP>

SDS IP address

--sds_port <PORT>

Port associated with the SDS

--all_sds

Query SDS performance parameters from all SDSs.

--sdc_id <ID>

SDC ID

```

--sdc_name <NAME>
    SDC name

--sdc_guid <GUID>
    SDC Global Unique Identifier

--sdc_ip <IP>
    SDC IP address

--all_sdc
    Query SDC performance parameters from all SDCs.

--print_all
    Print all performance parameters, including those with active profile default
    values.

```

Example

```
scli --query_performance_parameters --all_sdc
```

query_properties

Retrieve any set of properties, on any set of objects of the specified type.

The properties that can be queried depend on the type of the object that is being queried. For example, SDS has different attributes than Volume.

A number of preset combinations are available for use with this command. A preset is a predefined set of properties, usually with some logical relationship, which specifies a group of commonly queried properties. The available presets are also dependent on the object type. All object types have at least one preset called `all`, which queries all the properties for that type.

Syntax

```

scli --query_properties --object_type <TYPE> (--object_id <ID> | --
all_objects) (--properties <PROPS> | --preset <PRESET>)
[--group_by_property]

```

Parameters

```

--object_type <TYPE>
    Object type to query. One of:
    SYSTEM
    PROTECTION_DOMAIN
    STORAGE_POOL
    FAULT_SET
    SDS
    SDC
    VOLUME
    DEVICE
    VTREE

```

SCSI_INITIATOR
 CONSISTENCY_GROUP
 RFCACHE_DEVICE
 MDM

Note

To view detailed presets and properties options for a type, enter `scli --query_properties --object_type <TYPE>`, where *<TYPE>* is one of the above options.

`--object_id <ID>`

Comma-separated list of object ID used for querying one or more specific objects. Omit the space after each comma.

`--all_objects`

Query all objects of the specified type.

`--properties <PROPS>`

Query a comma-separated list of properties. Omit the space after each comma. See the relevant table below for a list of properties that can be queried per object type

`--preset <PRESET>`

Query a predefined set of properties. Omit the space after each comma. See the relevant table below for the list of presets that can be used per object type.

`--group_by_property`

Group results by property type, rather than by object (the default).

Note

Use `scli --query_properties --object_type <TYPE>` with one of the valid types above, to get detailed presets and properties options.

Example

```
scli --query_properties --object_type SDS --all_objects --
properties IPS,PORT,PROTECTION_DOMAIN_ID,RMCACHE_ENABLED
```

Sample output

```
# scli --query_properties --object_type SDS --all_objects --
properties IPS,PORT,PROTECTION_DOMAIN_ID,RMCACHE_ENABLED
SDS 9d0f166400000000:
    IPS
10.76.60.233
    PORT                                7072
    PROTECTION_DOMAIN_ID
dc65bd9900000000
    RMCACHE_ENABLED                    Yes

SDS 9d0f166d00000002:
    IPS
10.76.60.234
```

```

        PORT 7072
        PROTECTION_DOMAIN_ID
dc65bd9900000000
        RMCACHE_ENABLED No

SDS 9d0f166e00000003:
        IPS
10.76.60.232
        PORT 7072
        PROTECTION_DOMAIN_ID
dc65bd9900000000
        RMCACHE_ENABLED No

SDS 9d0f166f00000004:
        IPS
10.76.60.236
        PORT 7072
        PROTECTION_DOMAIN_ID
dc65bd9900000000
        RMCACHE_ENABLED No

SDS 9d0f167100000001:
        IPS
10.76.60.235
        PORT 7072
        PROTECTION_DOMAIN_ID
dc65bd9900000000
        RMCACHE_ENABLED No

```

Object presets

The following table provides a list of presets that can be used per object type.

Note

Sys=System, PD=Protection Domain, SP=Storage Pool, FS=Fault Set, Vol=Volume, Dev=Device

Preset	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
All	x	x	x	x	x	x	x	x	x
CAPACITY	x	x	x	x	x			x	
IO	x	x	x	x	x	x	x	x	
RAM_CACHE	x	x	x	x	x		x		
PERFORMANCE_PARAMETERS									

Object properties

The following table provides a list of properties that can be queried per object type

Note

Sys=System, PD=Protection Domain, SP=Storage Pool, FS=Fault Set, Vol=Volume, Dev=Device

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
CAPACITY_LIMIT_IN_KB	x	x	x	x	x			x	
MAX_CAPACITY_IN_KB	x	x	x	x	x			x	
CAPACITY_IN_USE_IN_KB	x	x	x	x	x			x	
THICK_CAPACITY_IN_USE_IN_KB	x	x	x	x	x			x	
THIN_CAPACITY_IN_USE_IN_KB	x	x	x	x	x			x	
SNAP_CAPACITY_IN_USE_IN_KB	x	x	x	x	x			x	
UNREACHABLE_UNUSED_CAPACITY_IN_KB	x	x	x	x	x			x	
UNUSED_CAPACITY_IN_KB	x	x	x	x	x			x	
SNAP_CAPACITY_IN_USE_OCCUPIED_IN_KB	x	x	x	x	x			x	
THIN_CAPACITY_ALLOCATED_IN_KB	x	x	x	x	x			x	
SPARE_CAPACITY_IN_KB	x	x	x						
AVAILABLE_FOR_THICK_ALLOCATION_IN_KB	x	x	x						
PROTECTED_CAPACITY_IN_KB	x	x	x						
DEGRADED_HEALTHY_CAPACITY_IN_KB	x	x	x						
DEGRADED_FAILED_CAPACITY_IN_KB	x	x	x						
FAILED_CAPACITY_IN_KB	x	x	x						
PROTECTED_VAC_IN_KB	x	x	x	x	x			x	
DEGRADED_HEALTHY_VAC_IN_KB	x	x	x	x	x			x	
DEGRADED_FAILED_VAC_IN_KB	x	x	x	x	x			x	
FAILED_VAC_IN_KB	x	x	x	x	x			x	
MOVING_CAPACITY_IN_KB	x	x	x						
ACTIVE_MOVING_CAPACITY_IN_KB	x	x	x						
PENDING_MOVING_CAPACITY_IN_KB	x	x	x						
FWD_REBUILD_CAPACITY_IN_KB	x	x	x						

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
ACTIVE_FWD_REBUILD_CAPACITY_IN_KB	x	x	x						
PENDING_FWD_REBUILD_CAPACITY_IN_KB	x	x	x						
BCK_REBUILD_CAPACITY_IN_KB	x	x	x						
ACTIVE_BCK_REBUILD_CAPACITY_IN_KB	x	x	x						
PENDING_BCK_REBUILD_CAPACITY_IN_KB	x	x	x						
REBALANCE_CAPACITY_IN_KB	x	x	x						
ACTIVE_REBALANCE_CAPACITY_IN_KB	x	x	x						
PENDING_REBALANCE_CAPACITY_IN_KB	x	x	x						
AT_REST_CAPACITY_IN_KB	x	x	x						
ACTIVE_MOVING_IN_FWD_REBUILD_JOBS	x	x	x	x	x			x	
ACTIVE_MOVING_IN_BCK_REBUILD_JOBS	x	x	x	x	x			x	
ACTIVE_MOVING_IN_REBALANCE_JOBS	x	x	x	x	x			x	
ACTIVE_MOVING_OUT_FWD_REBUILD_JOBS	x	x	x	x	x			x	
ACTIVE_MOVING_OUT_BCK_REBUILD_JOBS	x	x	x	x	x			x	
ACTIVE_MOVING_OUT_REBALANCE_JOBS	x	x	x	x	x			x	
PENDING_MOVING_IN_FWD_REBUILD_JOBS	x	x	x	x	x			x	
PENDING_MOVING_IN_BCK_REBUILD_JOBS	x	x	x	x	x			x	
PENDING_MOVING_IN_REBALANCE_JOBS	x	x	x	x	x			x	
PENDING_MOVING_OUT_FWD_REBUILD_JOBS	x	x	x	x	x			x	
PENDING_MOVING_OUT_BCK_REBUILD_JOBS	x	x	x	x	x			x	
PENDING_MOVING_OUT_REBALANCE_JOBS	x	x	x	x	x			x	

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
IN_USE_VAC_IN_KB	x	x	x	x	x			x	
PRIMARY_VAC_IN_KB	x	x	x	x	x			x	
SECONDARY_VAC_IN_KB	x	x	x	x	x			x	
REBUILD_WAIT_SEND_Q_LENGTH	x	x		x	x				
REBALANCE_WAIT_SEND_Q_LENGTH	x	x		x	x				
REBUILD_PER_RECEIVE_JOB_NET_THROTTLING_IN_KBPS	x	x		x	x				
REBALANCE_PER_RECEIVE_JOB_NET_THROTTLING_IN_KBPS	x	x		x	x				
FIXED_READ_ERROR_COUNT	x	x	x	x	x			x	
PRIMARY_READ_BWC	x	x	x	x	x			x	
PRIMARY_READ_FROM_DEV_BWC	x	x	x	x	x			x	
PRIMARY_WRITE_BWC	x	x	x	x	x			x	
SECONDARY_READ_BWC	x	x	x	x	x			x	
SECONDARY_READ_FROM_DEV_BWC	x	x	x	x	x			x	
SECONDARY_WRITE_BWC	x	x	x	x	x			x	
FWD_REBUILD_READ_BWC	x	x	x	x	x			x	
FWD_REBUILD_WRITE_BWC	x	x	x	x	x			x	
BCK_REBUILD_READ_BWC	x	x	x	x	x			x	
BCK_REBUILD_WRITE_BWC	x	x	x	x	x			x	
REBALANCE_READ_BWC	x	x	x	x	x			x	
REBALANCE_WRITE_BWC	x	x	x	x	x			x	
TOTAL_READ_BWC	x	x	x	x	x			x	
TOTAL_WRITE_BWC	x	x	x	x	x			x	
USER_DATA_READ_BWC	x	x	x			x	x		
USER_DATA_WRITE_BWC	x	x	x			x	x		
RMCACHE_SIZE_IN_KB	x	x		x	x				
RMCACHE_SIZE_IN_USE_IN_KB	x	x		x	x				

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
RMCACHE_ENTRY_EVICTI ON_SIZE_COUNT_IN_KB	x	x		x	x				
RMCACHE_BIG_BLOCK_EV ICTION_SIZE_COUNT_IN_ KB	x	x		x	x				
RMCACHE_NUM_OF_4KB_ ENTRIES RMCACHE_NUM_OF_8KB_ ENTRIES RMCACHE_NUM_OF_16KB_ ENTRIES RMCACHE_NUM_OF_32KB_ ENTRIES RMCACHE_NUM_OF_64KB_ ENTRIES RMCACHE_NUM_OF_128K B_ENTRIES	x	x		x	x				
RMCACHE_4KB_ENTRY_C OUNT RMCACHE_8KB_ENTRY_C OUNT RMCACHE_16KB_ENTRY_C OUNT RMCACHE_32KB_ENTRY_ COUNT RMCACHE_64KB_ENTRY_ COUNT RMCACHE_128KB_ENTRY_ COUNT	x	x		x	x				
RMCACHE_ENTRY_EVICTI ON_COUNT	x	x		x	x				
RMCACHE_BIG_BLOCK_EV ICTION_COUNT	x	x		x	x				
RMCACHE_NO_EVICTI ON_COUNT	x	x		x	x				
RMCACHE_SKIP_COUNT_ LARGE_IO	x	x		x	x				
RMCACHE_SKIP_COUNT_ UNALIGNED_4KB_IO	x	x		x	x				
RMCACHE_SKIP_COUNT_ CACHE_ALL_BUSY	x	x		x	x				
NUM_OF_UNMAPPED_VO LUMES	x	x	x						

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
NUM_OF_MAPPED_TO_ALL_VOLUMES	x	x	x						
NUM_OF_THICK_BASE_VOLUMES	x	x	x						
NUM_OF_THIN_BASE_VOLUMES	x	x	x						
NUM_OF_SNAPSHOTS	x	x	x						
NUM_OF_VOLUMES_IN_DELETION	x	x	x						
NUM_OF_DEVICES	x		x		x				
NUM_OF_SDS	x	x		x					
NUM_OF_STORAGE_POOLS	x	x							
NUM_OF_VOLUMES	x		x						x
NUM_OF_VTREES	x		x						
PROTECTION_DOMAIN_ID_LIST	x								
NUM_OF_PROTECTION_DOMAINS	x								
SDC_ID_LIST	x								
NUM_OF_SDC	x								
NUM_OF_FAULT_SETS	x	x							
ID	x	x	x	x	x	x	x	x	x
NAME	x	x	x	x	x	x	x	x	x
VERSION_NAME	x								
DEFAULT_VOL_OBFUSCATION	x								
CAPACITY_ALERT_HIGH_THRESHOLD	x								
CAPACITY_ALERT_CRITICAL_THRESHOLD	x								
INSTALL_ID	x								
SW_ID	x								
DAYS_INSTALLED	x								
MAX_LICENSED_CAPACITY	x								
CAPACITY_DAYS_LEFT	x								
OBFUSCATION_DAYS_LEFT	x								

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
SNAPSHOTS_DAYS_LEFT	x								
QOS_DAYS_LEFT	x								
REPLICATION_DAYS_LEFT	x								
INITIAL_LICENSE	x								
THICK_VOLUME_PERCENT	x								
MDM_MODE	x								
MDM_CLUSTER_STATE	x								
PRIMARY_MDM_ACTOR_IPS	x								
PRIMARY_MDM_ACTOR_PORT	x								
SECONDARY_MDM_ACTOR_IPS	x								
SECONDARY_MDM_ACTOR_PORT	x								
TIEBREAKER_MDM_ACTOR_IPS	x								
TIEBREAKER_MDM_ACTOR_PORT	x								
MDM_MGMT_IPS	x								
MDM_MGMT_PORT	x								
RESTRICTED_SDC_MODE_ENABLED	x								
SDS_ID_LIST		x		x					
STORAGE_POOL_ID_LIST		x							
FAULT_SET_ID_LIST		x							
STATE		x		x	x			x	
REBUILD_NETWORK_THROTTLING_ENABLED		x							
REBALANCE_NETWORK_THROTTLING_ENABLED		x							
OVERALL_IO_NETWORK_THROTTLING_ENABLED		x							
REBUILD_NETWORK_THROTTLING		x							
REBALANCE_NETWORK_THROTTLING		x							
OVERALL_IO_NETWORK_THROTTLING		x							

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
DEVICE_ID_LIST			x		x				
VOLUME_ID_LIST			x			x			
VTREE_ID_LIST			x						
SPARE_PERCENT			x						
PROTECTION_DOMAIN_ID			x	x	x				
ZERO_PAD_ENABLED			x						
USE_RMCACHE			x				x		
RMCACHE_WRITE_HANDLING_MODE			x						
REBUILD_ENABLED			x						
REBUILD_IO_PRIORITY_POLICY			x						
NUM_REBUILD_IOPS_PER_DEVICE			x						
REBUILD_BW_LIMIT_PER_DEVICE			x						
REBUILD_APP_IOPS_PER_DEVICE_THRESHOLD			x						
REBUILD_APP_BW_PER_DEVICE_THRESHOLD			x						
REBUILD_QUIET_PERIOD			x						
REBALANCE_ENABLED			x						
REBALANCE_IO_PRIORITY_POLICY			x						
NUM_REBALANCE_IOPS_PER_DEVICE			x						
REBALANCE_BW_LIMIT_PER_DEVICE			x						
REBALANCE_APP_IOPS_PER_DEVICE_THRESHOLD			x						
REBALANCE_APP_BW_PER_DEVICE_THRESHOLD			x						
REBALANCE_QUIET_PERIOD			x						
NUM_PARALLEL_JOBS_PER_DEVICE			x						
IPS					x				
PORT					x				
ON_VMWARE					x				

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
PROTECTION_DOMAIN_ID					x				
FAULT_SET_ID					x				
MEMBERSHIP_STATE					x				
MDM_CONNECTION_STATE					x	x			
DRL_MODE					x				
RMCACHE_ENABLED					x				
RMCACHE_SIZE					x				
RMCACHE_FROZEN					x				
RMCACHE_MEMORY_ALLOCATION_STATE					x				
NUMBER_OF_IO_BUFFERS					x				
NUM_OF_MAPPED_VOLUMES						x			
GUID						x			
IP						x			
APPROVED						x			
CHILD_VOLUME_ID_LIST							x		
NUM_OF_CHILD_VOLUMES							x		
DESCENDANT_VOLUME_ID_LIST							x		
NUM_OF_DESCENDANT_VOLUMES							x		
NUM_OF_MAPPED_SDCS							x		
SIZE							x		
OBFUSCATED							x		
CREATION_TIME							x		
TYPE							x		
CONSISTENCY_GROUP_ID							x		
STORAGE_POOL_ID							x	x	x
VTREE_ID							x		
ANCESTOR_ID							x		
SOURCE_DELETED							x		
MAPPING_TO_ALL_SDCS_ENABLED							x		

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
AVG_READ_SIZE_IN_BYTES								x	
AVG_WRITE_SIZE_IN_BYTES								x	
AVG_READ_LATENCY_IN_MICROSEC								x	
AVG_WRITE_LATENCY_IN_MICROSEC								x	
CURRENT_PATH								x	
ORIGINAL_PATH								x	
ERR_STATE								x	
CAPACITY_LIMIT								x	
MAX_CAPACITY								x	
SDS_ID								x	
NET_CAPACITY_IN_USE_IN_KB									x
BASE_NET_CAPACITY_IN_USE_IN_KB									x
SNAP_NET_CAPACITY_IN_USE_IN_KB									x
TRIMMED_CAPACITY_IN_KB									x
BASE_VOLUME_ID									x
IQN									

query_remote_read_only_limit_state

Query the MDM's remote access restriction state. If the state is enabled, remote users may only issue read-only commands to the MDM. If the state is disabled, all command types may be issued to the MDM by remote clients.

Syntax

```
scli --query_remote_read_only_limit_state
```

Parameters

None.

Example

```
scli --query_remote_read_only_limit_state
```

query_system_limits

Retrieve information about the system limits.

Syntax

```
scli --query_system_limits
```

Parameters

None.

Example

```
scli --query_system_limits
```

query_upgrade

Retrieve information about the upgrade process.

Syntax

```
scli --query_upgrade
      [--use_nonsecure_communication]
```

Parameters

--use_nonsecure_communication

Allow SCLI commands to be executed when secure communication mode is not enabled. This is necessary when the base system does not use secure communication mode—for example ScaleIO v1.32.x.

Example

```
scli --query_upgrade --use_nonsecure_communication
```

refresh_mdm_cluster_capabilities

Refresh the exposed cluster node capabilities.

This command is usually used to instruct the cluster nodes to check whether LDAP and SSL libraries are installed.

Syntax

```
scli --refresh_mdm_cluster_capabilities [OPTIONS]
```

Parameters

None.

Example

```
scli --refresh_mdm_cluster_capabilities --mdm_port 6611
```

remove_standby_mdm

Remove a standby MDM, that is not part of the cluster, from the system.

Syntax

```
scli --remove_standby_mdm (--remove_mdm_id <ID> | --remove_mdm_ip <IP> [--remove_mdm_port <PORT>] | --remove_mdm_name <NAME>)
```

Parameters

- remove_mdm_id <ID>**
ID of the MDM to remove
- remove_mdm_ip <IP>**
IP address of the MDM to remove
- remove_mdm_port <PORT>**
Port associated with the MDM to remove
- remove_mdm_name <NAME>**
Name of the MDM to remove

Example

```
scli --remove_standby_mdm --remove_mdm_name mdm153
```

rename_mdm

Rename an MDM Cluster node.

Syntax

```
scli --rename_mdm [--new_mdm_name <NAME> | --i_am_sure] (--target_mdm_id <ID> | --target_mdm_ip <IP> [--target_mdm_port <PORT>] | --target_mdm_name <NAME>)
```

Parameters

- target_mdm_id <ID>**
ID of the MDM to be renamed
- target_mdm_ip <IP>**
IP address of the MDM to be renamed
- target_mdm_port <PORT>**
Port of the MDM to be renamed
- target_mdm_name <NAME>**

Current name of the MDM to be renamed

--new_mdm_name *<NAME>*

New MDM name. The MDM name must be unique. If a new name is not provided, the old name will be deleted.

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Example

```
scli --rename_mdm --new_mdm_name mdm3 --target_mdm_name mdm2
```

rename_system

Name or rename the system.

To determine the current system name, use the `query_cluster` or `query_all` command.

Syntax

```
scli --rename_system --new_name <NAME>
```

Parameters

--new_name *<NAME>*

New name to associate with the system.

Example

```
scli --rename_system --new_name sio-prod-sys2
```

replace_cluster_mdm

Replace members of the MDM cluster. Up to half (rounded down) of the cluster members can be replaced at one time.

Syntax

```
scli --replace_cluster_mdm ((--add_slave_mdm_id <ID> | --
add_slave_mdm_ip <IP> [--add_slave_mdm_port <PORT>] | --
add_slave_mdm_name <NAME>)| (--remove_slave_mdm_id <ID> | --
remove_slave_mdm_ip <IP> [--remove_slave_mdm_port <PORT>] | --
remove_slave_mdm_name <NAME>)) ((--add_tb_id <ID> | --add_tb_ip
<IP> [--add_tb_port <PORT>] | --add_tb_name <NAME>) | (--
remove_tb_id <ID> | --remove_tb_ip <IP> [--remove_tb_port <PORT>] |
--remove_tb_name <NAME>))
[--allow_leave_failed]
[--i_am_sure]
```

Parameters

--add_slave_mdm_id <ID>

Comma-separated list of Slave MDM IDs that will be part of the cluster. A maximum of two (2) IDs are allowed. Omit the space after the comma.

--add_slave_mdm_ip <IP>

Comma-separated list of Slave MDM IP addresses that will be part of the cluster. A maximum of two (2) IP addresses are allowed. Omit the space after the comma.

--add_slave_mdm_port <PORT>

Comma-separated list of Slave MDM ports that will be part of the cluster. A maximum of two (2) ports are allowed. Omit the space after the comma.

--add_slave_mdm_name <NAME>

Comma-separated list of Slave MDM names that will be part of the cluster. A maximum of two (2) names are allowed. Omit the space after the comma.

--remove_slave_mdm_id <ID>

Comma-separated list of Slave MDM IDs that will be removed from the cluster. A maximum of two (2) IDs are allowed. Omit the space after the comma.

--remove_slave_mdm_ip <IP>

Comma-separated list of Slave MDM IP addresses that will be removed from the cluster. A maximum of two (2) IP addresses are allowed. Omit the space after the comma.

--remove_slave_mdm_port <PORT>

Comma-separated list of Slave MDM ports that will be removed from the cluster. A maximum of two (2) ports are allowed. Omit the space after the comma.

--remove_slave_mdm_name <NAME>

Comma-separated list of Slave MDM names that will be removed from the cluster. A maximum of two (2) names are allowed. Omit the space after the comma.

--add_tb_id <ID>

Comma-separated list of Tie-Breaker IDs that will be part of the cluster. A maximum of two (2) IDs are allowed. Omit the space after the comma.

--add_tb_ip <IP>

Comma-separated list of Tie-Breaker IP addresses that will be part of the cluster. A maximum of two (2) IP addresses are allowed. Omit the space after the comma.

--add_tb_port <PORT>

Comma-separated list of Tie-Breaker ports that will be part of the cluster. A maximum of two (2) ports are allowed. Omit the space after the comma.

--add_tb_name <NAME>

Comma-separated list of Tie-Breaker names that will be part of the cluster. A maximum of two (2) names are allowed. Omit the space after the comma.

--remove_tb_id <ID>

Comma-separated list of Tie-Breaker IDs that will be removed from the cluster. A maximum of two (2) IDs are allowed. Omit the space after the comma.

--remove_tb_ip <IP>

Comma-separated list of Tie-Breaker IP addresses that will be removed from the cluster. A maximum of two (2) IP addresses are allowed. Omit the space after the comma.

--remove_tb_port <PORT>

Comma-separated list of Tie-Breaker ports that will be removed from the cluster. A maximum of two (2) ports are allowed. Omit the space after the comma.

--remove_tb_name <NAME>

Comma-separated list of Tie-Breaker names that will be removed from the cluster. A maximum of two (2) names are allowed. Omit the space after the comma.

--allow_leave_failed

Allow leaving currently failed MDMs in the cluster.

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Example

```
scli --replace_cluster_mdm --add_slave_mdm_name mdm33 --
remove_slave_mdm_name mdm31 --add_tb_name tb44 --remove_tb_name tb41
```

replace_mdm_security_files

Replace the MDM's self-signed certificate and key with a certificate signed by an external Certificate Authority. Security permissions are required in order to execute this command.

Note

Running the command on the Master MDM causes the MDM to restart. It may also cause a brief, single point of failure period due to an MDM switch over. For more information on externally signed security certificates, see the *ScaleIO User Guide*.

Syntax

```
scli --replace_mdm_security_files (--target_mdm_id <ID> | --
target_mdm_ip <IP> [--target_mdm_port <PORT>] | --target_mdm_name
<NAME>)
```

Parameters

--target_mdm_id <ID>

MDM ID

--target_mdm_ip <IP>

MDM IP address

--target_mdm_port <PORT>

MDM port

--target_mdm_name <NAME>

MDM name

Example

```
scli --replace_mdm_security_files --target_mdm_name mdm153
```

set_component_authentication_properties

Enable or disable component authentication properties.

Syntax

```
scli --set_component_authentication_properties (--  
use_authentication | --dont_use_authentication)
```

Parameters

None.

--use_authentication

Use authentication between system components

--dont_use_authentication

Do not use authentication between system components

Example

```
scli --set_component_authentication_properties --use_authentication
```

set_management_client_communication

Enable or disable secure communications between the MDM and the management client.

Syntax

```
scli --set_management_client_communication (--  
enable_client_secure_communication | --  
disable_client_secure_communication)
```

Parameters

--enable_client_secure_communication

Enable the use of security when communicating with management clients.

--disable_client_secure_communication

Disable the use of security when communicating with management clients.

Example

```
scli --set_management_client_communication --  
enable_client_secure_communication
```

set_performance_parameters

Apply performance profiles to system components. You can apply separate profiles for SDSs, SDCs, and the MDM cluster.

When a container is provided in the command (Protection Domain, Fault Set, all SDSs, all SDCs), the command configures all objects currently in the container. Objects that are added later will not be configured.

Note

If you change the performance profile of an SDS located on an SVM, you must afterwards perform manual memory allocation on the SVM.

Syntax

```
scli --set_performance_parameters ([--sds_id <ID> | --sds_name
<NAME> | --sds_ip <IP> [--sds_port <PORT>] | --protection_domain_id
<ID> | --protection_domain_name <NAME> | --fault_set_id <ID> | ((--
protection_domain_id <ID> | --protection_domain_name <NAME>) --
fault_set_name <NAME>) | --all_sds] [--sdc_id <ID> | --sdc_name
<NAME> | --sdc_guid <GUID> | --sdc_ip <IP> | --all_sdc] [--
apply_to_mdm]) --profile {DEFAULT | HIGH_PERFORMANCE}
```

Parameters

--sds_id <ID>
SDS ID

--sds_name <NAME>
SDS name

--sds_ip <IP>
SDS IP address

--sds_port <PORT>
Port associated with the SDS

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

--fault_set_id <ID>
Fault Set ID

--fault_set_name <NAME>
Name of the new Fault Set

--all_sds
Set SDS-related parameters on all SDSs.

--sdc_id <ID>
SDC ID

```

--sdc_name <NAME>
    SDC name

--sdc_guid <GUID>
    SDC Global Unique Identifier

--sdc_ip <IP>
    SDC IP address

--all_sdc
    Set SDS-related parameters on all SDCs.

--apply_to_mdm
    Apply the performance profile to the MDM. This flag is only applicable when
    setting the profile.

--profile {default | high_performance}
    Set the performance profile as default or high_performance. The high
    performance profile configures a predefined set of parameters for very high
    performance use cases.

```

Note

For a complete list of parameters controlled by the profiles, refer to the *ScaleIO Performance Fine-Tuning Technical Notes*.

Example

```
scli --set_performance_parameters --all_sds --all_sdc --profile
high_performance
```

set_restricted_sdc_mode

Enable or disable restricted SDC mode. When enabled, SDCs must be approved (by GUID or IP address) before volumes can be mapped to them.

Note

In a system that has been upgraded and already has volumes mapped to SDCs, if you want to enable restricted SDC mode, you must first approve the SDCs and only then enable restricted SDC mode.

Syntax

```
scli --set_restricted_sdc_mode --restricted_sdc_mode {approved_id |
guid | none}
```

Parameters

```
--restricted_sdc_mode {approved_ip | guid | none}
```

Set the restricted SDC mode to one of the following:

- `approved_ip` — Volumes can be mapped only to approved SDCs that are also approved by IP address.

- **guid** — Volumes can be mapped only to approved SDCs.
- **none** — Restricted SDC mode is disabled and volumes can be mapped to any SDC.

Example

```
scli --set_restricted_sdc_mode --restricted_sdc_mode guid
```

start_upgrade

Start the upgrade process.

Syntax

```
scli --start_upgrade
[--use_nonsecure_communication]
```

Parameters

--use_nonsecure_communication

Allow SCLI commands to be executed when secure communication mode is not enabled. This is necessary when the base system does not use secure communication mode—for example ScaleIO v1.32.x.

Example

```
scli --start_upgrade --use_nonsecure_communication
```

switch_cluster_mode

Switch the MDM cluster from one operating mode or configuration to another.

Syntax

```
scli --switch_cluster_mode --cluster_mode <MODE> ((--
add_slave_mdm_id <ID> | --add_slave_mdm_ip <IP> [--
add_slave_mdm_port <PORT>] | --add_slave_mdm_name <NAME>)| (--
remove_slave_mdm_id <ID> | --remove_slave_mdm_ip <IP> [--
remove_slave_mdm_port <PORT>] | --remove_slave_mdm_name <NAME>))
((--add_tb_id <ID> | --add_tb_ip <IP> [--add_tb_port <PORT>] | --
add_tb_name <NAME>)| (--remove_tb_id <ID> | --remove_tb_ip <IP> [--
remove_tb_port <PORT>] | --remove_tb_name <NAME>))
[--allow_leave_failed]
[--i_am_sure]
```

Parameters

--cluster_mode <MODE>

Cluster operation mode. Can be one of the following:

1_node

The MDM cluster will operate in single-node mode.

Note

Single-node mode should only be used temporarily during maintenance activities. Single-node mode does not provide failover protection for the MDM.

3_node

The MDM cluster will operate in 3-node mode.

5_node

The MDM cluster will operate in 5-node mode.

--add_slave_mdm_id <ID>

Comma-separated list of Slave MDM IDs that will be part of the cluster. A maximum of two (2) IDs are allowed. Omit the space after the comma.

--add_slave_mdm_ip <IP>

Comma-separated list of Slave MDM IP addresses that will be part of the cluster. A maximum of two (2) IP addresses are allowed. Omit the space after the comma.

--add_slave_mdm_port <PORT>

Comma-separated list of Slave MDM ports that will be part of the cluster. A maximum of two (2) ports are allowed. Omit the space after the comma.

--add_slave_mdm_name <NAME>

Comma-separated list of Slave MDM names that will be part of the cluster. A maximum of two (2) names are allowed. Omit the space after the comma.

--remove_slave_mdm_id <ID>

Comma-separated list of Slave MDM IDs that will be removed from the cluster. A maximum of two (2) IDs are allowed. Omit the space after the comma.

--remove_slave_mdm_ip <IP>

Comma-separated list of Slave MDM IP addresses that will be removed from the cluster. A maximum of two (2) IP addresses are allowed. Omit the space after the comma.

--remove_slave_mdm_port <PORT>

Comma-separated list of Slave MDM ports that will be removed from the cluster. A maximum of two (2) ports are allowed. Omit the space after the comma.

--remove_slave_mdm_name <NAME>

Comma-separated list of Slave MDM names that will be removed from the cluster. A maximum of two (2) names are allowed. Omit the space after the comma.

--add_tb_id <ID>

Comma-separated list of Tie-Breaker IDs that will be part of the cluster. A maximum of two (2) IDs are allowed. Omit the space after the comma.

--add_tb_ip <IP>

Comma-separated list of Tie-Breaker IP addresses that will be part of the cluster. A maximum of two (2) IP addresses are allowed. Omit the space after the comma.

--add_tb_port <PORT>

Comma-separated list of Tie-Breaker ports that will be part of the cluster. A maximum of two (2) ports are allowed. Omit the space after the comma.

--add_tb_name <NAME>

Comma-separated list of Tie-Breaker names that will be part of the cluster. A maximum of two (2) names are allowed. Omit the space after the comma.

--remove_tb_id <ID>

Comma-separated list of Tie-Breaker IDs that will be removed from the cluster. A maximum of two (2) IDs are allowed. Omit the space after the comma.

--remove_tb_ip <IP>

Comma-separated list of Tie-Breaker IP addresses that will be removed from the cluster. A maximum of two (2) IP addresses are allowed. Omit the space after the comma.

--remove_tb_port <PORT>

Comma-separated list of Tie-Breaker ports that will be removed from the cluster. A maximum of two (2) ports are allowed. Omit the space after the comma.

--remove_tb_name <NAME>

Comma-separated list of Tie-Breaker names that will be removed from the cluster. A maximum of two (2) names are allowed. Omit the space after the comma.

--allow_leave_failed

Allow leaving currently failed MDMs in the cluster.

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Example

```
scli --switch_cluster_mode --cluster_mode 5_node --add_slave_mdm_ip
192.168.1.164 --add_tb_ip 192.168.1.134
```

switch_mdm_ownership

Switch MDM cluster ownership from the current Master MDM to a different MDM.

Syntax

```
scli --switch_mdm_ownership (--new_master_mdm_id <ID> | --
new_master_mdm_ip <IP> [--new_master_mdm_port <PORT>] | --
new_master_mdm_name <NAME>)
```

Parameters

--new_master_mdm_id <ID>

MDM ID. Must be an MDM with manager role.

--new_master_mdm_ip <IP>

MDM IP. Must be an MDM with manager role.

--new_master_mdm_port *<PORT>*

MDM port. Must be an MDM with manager role.

--new_master_mdm_name *<NAME>*

MDM name. Must be an MDM with manager role.

Example

```
scli --switch_mdm_ownership --new_master_mdm_ip 192.168.1.164
```

CHAPTER 12

User Commands

This section contains commands for managing users.

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add_user

Add a user to the system. A randomly generated password for the created user is returned.

This command is available only to administrator users.

Each user name should conform to the following rules:

1. Contains fewer than 32 characters
2. Contains only alphanumeric and punctuation characters (when punctuation characters are being used, you may need to use the " or ' characters in order to allow it).
3. Is unique within the object type

Syntax

```
scli --add_user --username <NAME> --user_role {Monitor | Configure
| BackEndConfigure | FrontEndConfigure | Security | Administrator}
```

Parameters

--username <NAME>

User name to add to the system

--user_role {Monitor | Configure | BackEndConfigure | FrontEndConfigure | Security | Administrator}

Role of the user: Monitor, Configurator, Backend Configurator, Frontend Configurator, Security, or Administrator. For information on user roles, see the *ScaleIO User Guide*.

Example

```
scli --add_user --username siouser2 --user_role Configure
```

delete_user

Delete the specified user from the system.

This command is available only to administrator users.

Syntax

```
scli --delete_user (--user_id <ID> | --username <NAME>)
```

Parameters

--user_id <ID>

ID of the user to be deleted

--username <NAME>

Username of the user to be deleted

Example

```
scli --delete_user --username siouser2
```

disable_admin

Disables the default Superuser.

The Superuser is the default user for setting up the system, and has all the privileges of all user roles. In some cases you may need to disable the Superuser in order to ensure that all users are associated with specific user roles.

Note

To re-enable the Superuser, use the `reset_admin` command.

Syntax

```
scli --disable_admin  
[--i_am_sure]
```

Parameters

--i_am_sure

Skip the safety questions for command execution.

Example

```
scli --disable_admin --i_am_sure
```

modify_user

Modify the user role of the specified user in the system.

This command is available only to administrator users.

Syntax

```
scli --modify_user (--user_id <ID> | --username <NAME>) --user_role  
{Monitor | Configure | BackEndConfigure | FrontEndConfigure |  
Security | Administrator}
```

Parameters

--user_id <ID>

User ID of the user to modify

Note

The user ID is displayed when you create the user. To find this ID at a later time, use the `query_user` command.

--username <NAME>

User name of the user to modify

--user_role {Monitor | Configure | BackEndConfigure | FrontEndConfigure | Security | Administrator}

Role of the user: Monitor, Configurator, Backend Configurator, Frontend Configurator, Security, or Administrator. For information on user roles, see the *ScaleIO User Guide*.

Example

```
scli --modify_user --username siouser3 --user_role Monitor
```

query_user

Display information about the specified user.

This command is available only to administrator users.

Syntax

```
scli --query_user (--user_id <ID> | --username <NAME>)
```

Parameters

--user_id <ID>

User's ID number

Note

The user ID is displayed when you create the user. To find this ID at a later time, use the `query_user` command.

--username <NAME>

Name of the user

Example

```
scli --query_user --username sio_user
```

query_user_authentication_properties

Retrieve information about LDAP services configured in the system.

Syntax

```
scli --query_user_authentication_properties
```

Parameters

None.

Example

```
scli --query_user_authentication_properties
```

query_users

Display all the users defined in the system, with their roles and user ID.

Syntax

```
scli --query_users
```

Parameters

None.

Example

```
scli --query_users
```

Reset the admin user password

You can reset the password of the default admin user (Supeuser) using the combination of a file written to the MDM and the `reset_admin` CLI command.

Before you begin

Ensure that you are using the admin user with Superuser permissions.

Note

The procedure refers only to the default admin user with Superuser permissions, which was created during the system setup.

Procedure

1. Create a text file named `MDM_SERVICE_MODE` on the MDM in the location corresponding to your operating system:
 - **Windows:** `C:\Program Files\emc\scaleio\MDM\logs\MDM_SERVICE_MODE.txt`
 - **Linux:** `/opt/emc/scaleio/mdm/logs/MDM_SERVICE_MODE.txt`
2. In the body of the file, type the text `Reset Admin`, and save the file.
3. From the CLI, run the `reset_admin` command:

```
scli --reset_admin
```

Results

The admin user password is reset to `admin`.

reset_admin

Reset the default Superuser.

Reset the password of the default admin user with Superuser permissions.

reset_admin

```
scli --reset_admin
[--i_am_sure]
```

Syntax

```
scli --reset_admin
[--i_am_sure]
```

Parameters

--i_am_sure

Skip the safety questions for command execution.

Example

```
scli --disable_admin --i_am_sure
```

reset_password

Generate a new password for the specified user. The user must change the password again after logging in with the generated password.

This command is available only to administrator users.

Syntax

```
scli --reset_password (--user_id <ID> | --username <NAME>)
```

Parameters

--user_id <ID>

User ID of the user whose password will be reset

Note

The user ID is displayed when you create the user. To find this ID at a later time, use the `query_user` command.

--username <NAME>

User name of the user whose password will be reset

Example

```
scli --reset_password --username siouser3
```

set_password

Change the password of the user currently logged in to the system.

This command is available only to administrator users.

Syntax

```
scli --set_password [--old_password <OLD_PASSWORD>] [--new_password <NEW_PASSWORD>]
```

Parameters

None.

--old_password <OLD_PASSWORD>

User's current password

--new_password <NEW_PASSWORD>

User's new password

Note

In Linux, to prevent the password from being recorded in the history log, omit the `old_password` or `new_password` flag and enter the password interactively.

Example

```
scli --set_password --old_password 1!2@3A --new_password P9*7&6
```

Password rules

The password must conform to the following rules:

1. Contains between six and 31 characters.
2. Contains characters from at least three of the following groups: [a-z], [A-Z], [0-9], special characters (!@#\$...)
3. The current password is not allowed.

set_user_authentication_method

Set the user authentication method for the system.



Use this command with caution. The operation is complex to roll back.

Note

For details about setting up LDAP, refer to the *ScaleIO User Roles and LDAP Usage Technical Notes*.

Syntax

```
scli --set_user_authentication_method (--ldap_authentication | --  
native_authentication | --native_and_ldap_authentication)  
[--i_am_sure]
```

Parameters**--ldap_authentication**

LDAP-based authentication method where users are managed on an LDAP-compliant server. Configure LDAP service and LDAP user before switching to this authentication method.

--native_authentication

Native authentication method where users are managed locally in the system

--native_and_ldap_authentication

A hybrid authentication method. Both LDAP and Native users may log in to the system after it is set.

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Example

```
scli --set_user_authentication_method --  
native_and_ldap_authentication --i_am_sure
```

CHAPTER 13

Volume Commands

This section contains commands for managing volumes.

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add_volume

Add a volume to the ScaleIO system.

You can create a volume when the requested capacity is available and system capacity is balanced. To start allocating volumes, at least three SDS nodes must be configured in the system.

The created volume cannot be used until it is mapped to at least one SDC.

Syntax

```
scli --add_volume (((--protection_domain_id <ID> | --
protection_domain_name <NAME>) --storage_pool_name <NAME>) | --
storage_pool_id <ID>) --size_gb <SIZE>
[--volume_name <NAME>]
    [--vvol]
    [--thin_provisioned | --thick_provisioned]
    [--use_rmcache | --dont_use_rmcache]
```

Parameters

--protection_domain_id <ID>

Protection Domain ID

--protection_domain_name <NAME>

Protection Domain name

--storage_pool_name <NAME>

Storage Pool name

--storage_pool_id <ID>

Storage Pool ID

--size_gb <SIZE>

Volume size, in GB. Basic allocation granularity is 8 GB.

--volume_name <NAME>

Name to be associated with the added volume

--vvol

Indicate that the volume is a VVol. For more information on using VVols, see the *Using ScaleIO with VVols Technical Notes*.

--thin_provisioned | --thick_provisioned

Specifies whether the specified volume will be thin provisioned or thick provisioned (the default)

--use_rmcache | --dont_use_rmcache

Specifies whether the specified volume will use Read RAM Cache for caching. Default: `--use_rmcache`

Note

If you use the `storage_pool_id` parameter in the command, you do not need to also specify the Protection Domain ID or name, and the Storage Pool name.

Example

```
scli --mdm_ip 192.168.1.200 --add_volume --size_gb 8 --volume_name
vol_1 --protection_domain_name pd1 --storage_pool_name sp1
```

Volume names

Assign each volume a meaningful name associated with its operational role. When a name has not been defined, the system may display default system-defined names that use the volume's ID.

Each volume name should conform to the following rules:

1. Contains fewer than 32 characters
2. Contains only alphanumeric and punctuation characters
3. Is unique within the object type

Note

ScaleIO objects are assigned a unique ID that can be used to identify the object in CLI commands. You can retrieve the ID via a query or through the object's property sheet in the GUI.

map_volume_to_sdc

Map a volume to an SDC.

This command exposes the volume to the specified SDC, effectively creating a block device on the SDC.

Note

For Linux devices, the `scini` device name may change on reboot. It is therefore recommended that you mount a mapped volume to the ScaleIO unique ID, which is a persistent device name, rather than to the `scini` device name.

Syntax

```
scli --map_volume_to_sdc (--volume_id <ID> | --volume_name <NAME>)
(--sdc_id <ID> | --sdc_name <NAME> | --sdc_guid <GUID> | --sdc_ip
<IP>)
[--allow_multi_map]
```

Parameters

--volume_id <ID>

Volume ID

--volume_name <NAME>

Volume name

--sdc_id <ID>

SDC ID

--sdc_name <NAME>

SDC name

--sdc_guid <GUID>
SDC GUID

--sdc_ip <IP>
SDC IP address

--allow_multi_map
Allow mapping of additional SDCs to a volume that is already mapped. This flag is not relevant to the first volume mapping command, but should be specified in any subsequent mapping command.

For instructions on identifying the unique volume ID, see "Associating ScaleIO volumes with physical disks" in the *ScaleIO User Guide*.

Example

```
scli --mdm_ip 192.168.1.200 --map_volume_to_sdc --volume_name vol_1
--sdc_ip 192.168.1.3
```

modify_volume_capacity

Increase the capacity of a volume. You can increase (but not decrease) a volume capacity at any time, as long as there is enough capacity for the volume size to grow.

Syntax

```
scli --modify_volume_capacity (--volume_id <ID> | --volume_name
<NAME>) --size_gb <SIZE>
```

Parameters

--volume_id <ID>
Volume ID

--volume_name <NAME>
Volume name

--size_gb <SIZE>
New volume size, in GB. Basic allocation granularity is 8 GB.

Example

```
scli --mdm_ip 192.168.1.200 --modify_volume_capacity
--volume_name vol_1 --size_gb 150000
```

query_all_volumes

Retrieve information about all volumes in the system. You can optionally filter the query results by Protection Domain or Storage Pool.

Syntax

```
scli --query_all_volumes
  [(((--protection_domain_id <ID>| --protection_domain_name
    <NAME>) --storage_pool_name <NAME>) | --storage_pool_id <ID>)]
```

Parameters

--protection_domain_id <ID>
Protection Domain ID

--protection_domain_name <NAME>
Protection Domain name

--storage_pool_name <NAME>
Storage Pool name

--storage_pool_id <ID>
Storage Pool ID

Example

```
scli --mdm_ip 192.168.1.200 --query_all_volumes
```

query_volume

Retrieve information about the specified volume.

Syntax

```
scli --query_volume (--volume_id <ID> | --volume_name <NAME>)
```

Parameters

--volume_id <ID>
Volume ID

--volume_name <NAME>
Volume name

Example

```
scli --query_volume --volume_name vol_18 --mdm_port 6611
```

query_volume_tree

Retrieve information about the entire V-Tree (a volume and all of its snapshots) of the specified volume.

Syntax

```
scli --query_volume_tree (--vtree_id <ID> | --volume_id <ID> | --volume_name
```

Parameters

--vtree_id <ID>

V-Tree ID

--volume_id <ID>

Volume ID

--volume_name <NAME>

Volume name

Example

```
scli --query_volume_tree --volume_name vol_18
```

remove_volume

Remove a ScaleIO volume.

Note

Removing a volume erases all the data on the corresponding volume.

Before removing a volume, you must ensure that it is not mapped to any SDCs. If the volume is mapped to SDCs, unmap the volume using the `unmap_volume_from_sdc` command or the ScaleIO GUI, or the vSphere plug-in (where applicable) before removing it.

Syntax

```
scli --remove_volume (--volume_id <ID> | --volume_name <NAME>) {--remove_entire_snapshot_tree | --remove_with_descendant_snapshots | --remove_descendant_snapshots_only} [--i_am_sure] [--allow_vvol_operation]
```

Parameters

--volume_id <ID>

ID of the volume to remove

--volume_name <NAME>

Name of the volume to remove

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

[Options]

Additional optional parameters:

--remove_entire_snapshot_tree

Remove the entire volume tree (V-Tree) attached to the specified volume, including parents and siblings.

--remove_with_descendant_snapshots

Remove the specified volume, and all volumes that were created as snapshots of the specified volume or one of its descendants.

--remove_descendant_snapshots_only

Remove snapshots created from the specified volume, but do not remove the specified volume.

--allow_vvol_operation

Must be set if the specified volume is a VMWare VVol.

Note

Before removing a V-Tree, you must unmap every volume in the V-Tree.

Example

```
scli --mdm_ip 192.168.1.200 --remove_volume --volume_name vol_1
```

rename_volume

Changes the name of a volume. You can use this command at any time.

Syntax

```
scli --rename_volume --volume_id <ID>| --volume_name <NAME> --
new_name <NAME>
```

Parameters**--volume_id <ID>**

Volume ID

--volume_name <NAME>

Volume name

--new_name <NAME>

New name to assign to the volume

Example

```
scli --mdm_ip 192.168.1.200 --rename_volume
--volume_name vol1 --new_name vol_new_1
```

set_volume_rmcache_usage

Control the use of Read RAM Cache in the specified volume.

You can only configure one volume at a time. If you want to ensure that all I/Os for this volume are cached, the relevant Storage Pool should be configured to use Read RAM Cache, and the relevant SDSs should all have Read RAM Cache enabled.

Note

You can also enable Read RAM Cache at the volume level during initial creation of the volume using the `add_volume` command.

Syntax

```
scli --set_volume_rmcache_usage (--volume_id <ID>| --volume_name
<NAME>) (--use_rmcache | --dont_use_rmcache)
[--i_am_sure]
```

Parameters

--volume_id <ID>

Volume ID

--volume_name <NAME>

Volume name

--use_rmcache

Use Read RAM Cache on the volume.

--dont_use_rmcache

Do not use Read RAM Cache on the volume. This is the default setting.

--i_am_sure

Skip the safety questions for command execution. (For example: "This could damage the stored data. Are you sure?")

Example

```
scli --set_volume_rmcache_usage --volume_name vol_10 --use_rmcache
```

snapshot_volume

Creates a snapshot of one or more volumes.

When you specify more than one volume (a list), a consistency group is generated and the ID associated with it is displayed. The snapshots under the consistency group are taken simultaneously for all listed volumes, thus ensuring their consistency.

Note

The consistency group is for convenience purposes only. There are no protective measures to conserve the consistency group, and you can delete members from it.

Syntax

```
scli --snapshot volume (--volume_id <ID>| --volume_name <NAME> | --
volume_id_from_file <FILE> | --volume_name_from_file <FILE>)
[--snapshot_name <NAME> | --snapshot_name_from_file <FILE>]
```

Parameters

--volume_id <ID>

Comma-separated list of Volume IDs. Omit the space after each comma.

--volume_name <NAME>

Comma-separated list of Volume names. Omit the space after each comma.

--volume_id_from_file <FILE>

File containing new, line-separated list of volume IDs

--volume_name_from_file <FILE>

File containing a new, line-separated list of volume names

--snapshot_name <NAME>

Comma-separated list of names to be associated with the created snapshots. The names in this list correspond to the names in the volume name or volume ID list. Omit the space after each comma.

--snapshot_name_from_file <FILE>

File containing a new, line-separated list of names to be associated with the created snapshots

Example

```
scli --mdm_ip 192.168.1.200 --snapshot_volume
--volume_name vol_1 --snapshot_name snap_1
```

Snapshot names

Assign the snapshot a meaningful name. When a name has not been defined, the system may display default system-defined names that use the volume's ID.

Assign snapshot names according to the following rules:

1. Contains fewer than 32 characters
 2. Contains only alphanumeric and punctuation characters
 3. Is unique within the object type
-

Note

ScaleIO objects are assigned a unique ID that can be used to identify the object in CLI commands. You can retrieve the ID via a query or through the object's property sheet in the GUI.

unmap_volume_from_sdc

Unmap a volume from one or all SDCs.

Syntax

```
scli --unmap_volume_from_sdc (--volume_id <ID>| --volume_name
<NAME>) (--sdc_id <ID> | --sdc_name <NAME> | --sdc_guid <GUID> | --
sdc_ip <IP> | --all_sdc)
[--i_am_sure]
```

Parameters

--volume_id <ID>

Volume ID

--volume_name <NAME>

Volume name

--sdc_id <ID>

SDC ID

--sdc_name <NAME>

SDC name

--sdc_guid <GUID>

SDC Global Unique Identifier

--sdc_ip <IP>

SDC IP address

--all_sdc

Unmap the volume from all SDCs.

--i_am_sure

Skip the safety questions for command execution. (For example: “This could damage the stored data. Are you sure?”)

Example (unmap volume from a single SDC)

```
scli --mdm_ip 192.168.1.200 --unmap_volume_from_sdc
--volume_name vol_1 --sdc_ip 192.168.1.3
```

Example (unmap volume from all SDCs)

```
scli --mdm_ip 192.168.1.200 --unmap_volume_from_sdc
--volume_name vol_1 --all_sdc
```

CHAPTER 14

Return messages

This section describes an overview of the messages that can be returned by the ScaleIO CLI.

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- [Message list](#) 182

Return messages overview

This section describes the contents and the types of return messages in the CLI.

Each return message contains the following:

- Name of the return message (return code)
- Message presented with the return code
- Commands that may return the relevant code
- Action or actions that may resolve the issue (if relevant)

Message list

The following section lists all ScaleIO return messages.

SDS device name changed

Parameter	Description
Name	SDS_DEVICE_NAME_CHANGED
Message	The SDS detected that the device name has changed. Re-run the command using the device ID.
Commands	<code>remove_sds_device</code> , <code>abort_remove_sds_device</code>
Description	In some situations (usually following a reboot), the operating system changes the device name. The SDS detects this change. <code>Remove_sds_device</code> is a time consuming operation. To ensure that you have chosen the correct device, alerts you to the name change.
Action	Identify the device in the output of <code>query_sds</code> and use the device ID to run the command again. You can also resynchronize the device name.

Success

Parameter	Description
Name	SUCCESS
Message	Success
Commands	All
Description	Command was executed successfully

Parameter	Description
Action	None

No resources

Parameter	Description
Name	NO_RESOURCES
Message	Insufficient resources
Commands	add_volume
Description	There is insufficient space to create a volume of the requested size
Action	Add capacity to the system by adding another SDS/device, or create a smaller volume

Timeout

Parameter	Description
Name	TIMEOUT
Message	A timeout occurred
Commands	All
Description	No reply received from the MDM within the specified timeout period
Action	Validate the requested operational state using queries

Already exists

Parameter	Description
Name	ALREADY_EXISTS
Message	Already Exists
Commands	All object addition commands
Description	The added object already exists
Action	Check command parameters, and use queries to view existing objects' properties

Communication error

Parameter	Description
Name	COMMUNICATION_ERROR
Message	Communication error
Commands	SDS related commands
Description	SDS has communication errors
Action	Use <code>query_all</code> to determine which SDS is disconnected

Wrong reconfiguration mode

Parameter	Description
Name	WRONG_RECONF_MODE
Message	SDS being configured, retry command
Commands	All SDS related commands
Description	SDS is being configured by the MDM
Action	Retry the command

SDS add device “open” error

Parameter	Description
Name	TGT_ADD_DEV_OPEN_ERROR
Message	Could not open SDS device
Commands	<code>add_sds</code> , <code>add_sds_device</code>
Description	SDS cannot open one of the specified devices
Action	Validate the command parameters. If correct, validate that the device can be accessed on the SDS.

SDS add device size problem

Parameter	Description
Name	TGT_ADD_DEV_SIZE_PROBLEM
Message	SDS device size error
Commands	<code>add_sds</code> , <code>add_sds_device</code>

Parameter	Description
Description	The device size is smaller or larger than the allowed size. For a full description of product limits, see the <i>ScaleIO User Guide</i> .
Action	Validate the command parameters, and set the device size appropriately

SDS add device IO error

Parameter	Description
Name	TGT_ADD_DEV_IO_ERROR
Message	Add SDS device IO error
Commands	<code>add_sds</code> , <code>add_sds_device</code>
Description	The SDS was unable to write to one of the specified devices
Action	Validate the command parameters, and check the specified devices

SDS actively attach to this MDM

Parameter	Description
Name	TGT_ACTIVE_ATTACH_TO_THIS_MDM
Message	SDS is actively attached to this MDM
Commands	<code>add_sds</code>
Description	SDS was already configured by this MDM. This usually implies that the provided IP address resolves to an already configured SDS that is currently connected. “Actively” implies that the SDS is configured and communicating with the MDM.
Action	Check the provided IP address. Contact Dell EMC Support.

SDS already attached to this MDM

Parameter	Description
Name	TGT_ALREADY_ATTACH_TO_THIS_MDM
Message	SDS is already attached to this MDM
Commands	<code>add_sds</code>

Parameter	Description
Description	SDS was previously configured by this MDM. This usually indicates that the SDS was previously removed using <code>remove_sds</code> , but was not cleaned up properly.
Action	Validate the SDS IP address and port, and check the MDM configuration to validate that the SDS is not already configured under a different IP address. If the SDS is not found in the MDM configuration, this might indicate that it was not cleaned up properly when it was removed. To add the SDS forcefully, thus overriding its configuration and data, use the <code>--force_clean</code> flag.

SDS active attach to other MDM

Parameter	Description
Name	TGT_ACTIVE_ATTACH_TO_OTHER_MDM
Message	SDS is actively attached to another MDM
Commands	<code>add_sds</code>
Description	SDS is already managed by another MDM. "Actively" implies that the SDS is configured and communicating with the MDM.
Action	Check the command parameters to validate the SDS IP address and port. Check the configuration of any other MDMs installed that might be connected to this SDS. Contact EMC Support.

SDS already attached to other MDM

Parameter	Description
Name	TGT_ALREADY_ATTACH_TO_OTHER_MDM
Message	SDS is already attached to another MDM
Commands	<code>add_sds</code>
Description	SDS was previously configured by another MDM
Action	Check your command parameters to validate the SDS IP address and port. Check for other installations of MDMs. If the SDS is not found in any MDM configuration, this might indicate that it was not cleaned up properly when it

Parameter	Description
	<p>was removed. To add the SDS, use the <code>-force_clean</code> flag.</p> <hr/> <p>Note</p> <p>This command erases the existing SDS configuration and data.</p> <hr/>

SDS not found

Parameter	Description
Name	TGT_NOT_FOUND
Message	Could not find SDS
Commands	All SDS related commands
Description	The SDS was not found
Action	Check the provided parameters. Use <code>query_all_sds</code> to view the configured SDSs.

Volume not found

Parameter	Description
Name	VOL_NOT_FOUND
Message	Could not find the volume
Commands	All volume related commands
Description	The volume was not found
Action	Check the provided parameters. Use <code>query_all_volumes</code> to view the configured volumes.

SDC not found

Parameter	Description
Name	INI_NOT_FOUND
Message	Could not find the SDC
Commands	All SDC related commands
Description	SDC was not found

Parameter	Description
Action	Use <code>query_all_sdc</code> to view the configured SDCs

Volume already mapped to SDC

Parameter	Description
Name	VOL_ALREADY_MAPPED_TO_THIS_INI
Message	The volume is already mapped to this SDC
Commands	<code>map_volume_to_sdc</code> (when mapping to a single SDC)
Description	The specified volume is already mapped to the specified SDC
Action	Check the command parameters, and use <code>query_all_volumes</code> to validate the current mapping

Volume already mapped to all SDCs

Parameter	Description
Name	VOL_ALREADY_MAPPED_TO_ALL_INIS
Message	The volume is already mapped to all SDCs
Commands	<code>map_volume_to_sdc</code> (when mapping to all SDCs)
Description	The specified volume is already mapped to all SDCs
Action	Check the command parameters, and use <code>query_all_volumes</code> to validate the current mapping

Volume not mapped to SDC

Parameter	Description
Name	VOL_NOT_MAPPED_TO_INI
Message	The volume is not mapped to SDC
Commands	<code>unmap_volume_from_sdc</code> , <code>query_sdc_volume_limits</code> , <code>set_sdc_volume_limits</code>
Description	The specified volume is not mapped to the specified SDC

Parameter	Description
Action	Check the command parameters, and use <code>query_all_sdc</code> to validate the current mapping

Volume mapped to all SDCs

Parameter	Description
Name	VOL_MAPPED_TO_ALL_INIS
Message	The volume is mapped to all SDCs
Commands	<code>map_volume_to_sdc</code> , <code>unmap_volume_from_sdc</code> , <code>set_sdc_volume_limits</code>
Description	The volume is mapped to all SDCs
Action	Check the command parameters, and use <code>query_all_volumes</code> to validate the current mapping

Too many mappings

Parameter	Description
Name	TOO_MANY_MAPPINGS
Message	There are too many mappings
Commands	<code>map_volume_to_sdc</code>
Description	Mapping of an additional volume will exceed the system limit
Action	Validate if all existing volumes that are mapped are relevant. Contact EMC Support.

Invalid volume ID

Parameter	Description
Name	INVALID_VOL_ID
Message	Invalid volume ID. Please try again with a valid ID.
Commands	All volume related commands
Description	The specified volume ID is invalid

Parameter	Description
Action	Check the specified volume ID. Use <code>query_all_volumes</code> to find the correct ID, or use the volume name.

Invalid SDS ID

Parameter	Description
Name	INVALID_TGT_ID
Message	Invalid SDS ID. Please try again with a valid ID.
Commands	All SDS commands
Description	The specified SDS ID is invalid
Action	Check the specified SDS ID. Use <code>query_all_sds</code> to find the correct ID, or use the SDS name or IP address.

Invalid SDC ID

Parameter	Description
Name	INVALID_INI_ID
Message	Invalid SDC ID. Please try again with a valid ID.
Commands	All SDC commands
Description	The specified SDC ID is invalid
Action	Check the specified SDC ID. Use <code>query_all_sdc</code> to find the correct ID, or use the SDC IP address.

Host not found

Parameter	Description
Name	HOST_NOT_FOUND
Message	Could not find the host
Commands	All SDS commands
Description	The specified host name was not found
Action	Check the specified host name

Duplicate host name

Parameter	Description
Name	DUP_HOST_NAME
Message	Duplicate host name
Commands	add_sds
Description	The list of host names includes two identical host names or IP addresses, or two host names are resolved to the same IP address
Action	Check the specified host name list

Address and port in use

Parameter	Description
Name	TGT_ADDR_AND_PORT_IN_USE
Message	The SDS IP address and port already in use. Please try with different ones.
Commands	add_sds
Description	The specified IP address and port are already in use by another defined SDS
Action	Check the specified IP address and port

Too many SDSs in Protection Domain

Parameter	Description
Name	TOO_MANY_TGTS_IN_FDOM
Message	There are too many SDSs in Protection Domain
Commands	add_sds
Description	Adding the SDS will exceed the system limit of allowed SDSs in a Protection Domain
Action	Check configuration

Too many SDSs

Parameter	Description
Name	TOO_MANY_TGTS
Message	There are too many SDSs

Parameter	Description
Commands	<code>add_sds</code>
Description	Adding the SDS will exceed the system limit of allowed SDSs in the system
Action	Check configuration

Too many volumes in Protection Domain

Parameter	Description
Name	TOO_MANY_VOLUMES_IN_FD
Message	Too many volumes in Protection Domain
Commands	<code>add_volume</code>
Description	Adding a volume will exceed the limit for the number of volumes allowed in a Protection Domain
Action	Check configuration

Too many volumes

Parameter	Description
Name	TOO_MANY_VOLS
Message	There are too many volumes
Commands	<code>add_volume</code>
Description	Adding a volume will exceed the limit for the number of volumes allowed in a system
Action	Check configuration

SDS name in use

Parameter	Description
Name	TGT_NAME_IN_USE
Message	SDS name is already in use. Please use a different name.
Commands	<code>add_sds</code> , <code>rename_sds</code>
Description	The specified SDS name is already in use by another SDS

Parameter	Description
Action	Use <code>query_all_sds</code> to validate existing names, and issue the command with another name

Volume name in use

Parameter	Description
Name	VOL_NAME_IN_USE
Message	Volume name already in use. Please use a different name.
Commands	<code>add_volume</code> , <code>rename_volume</code>
Description	The specified volume name is already in use by another volume
Action	Use <code>query_all_volumes</code> to validate existing names, and issue the command with another name

Duplicate SDS device name

Parameter	Description
Name	DUPLICATE_TGT_DEVICE_NAME
Message	Duplicate SDS device name
Commands	<code>add_sds</code>
Description	A device appears more than once in the <code>add_sds</code> command
Action	Validate command parameters

Duplicate SDC IP address

Parameter	Description
Name	DUPLICATE_SDC_IP
Message	More than one SDC exists for the same IP address. Use name or ID instead, or remove the duplicate SDC.
Commands	<code>map_volume_to_sdc</code> , <code>unmap_volume_from_sdc</code> ,

Parameter	Description
	<pre>set_sdc_volume_limits, query_sdc_volume_limits</pre>
Description	The specified SDC IP address is not unique. It is associated with more than one SDC.
Action	Use <code>query_all_sdc</code> to find the relevant ID. Use the SDC ID in the command instead of the SDC IP address.

SDS not under removal

Parameter	Description
Name	TGT_NOT_UNDER_REMOVAL
Message	SDS is not being removed
Commands	<pre>abort_remove_sds</pre>
Description	The SDS is not being removed
Action	Check command parameters. If the parameters are correct, it is still possible that the SDS has already been removed.

SDS being removed

Parameter	Description
Name	TGT_BEING_REMOVED
Message	SDS is being removed
Commands	SDS related commands
Description	The SDS is currently being removed
Action	None

Volume mapped

Parameter	Description
Name	VOL_MAPPED
Message	Volume is mapped

Parameter	Description
Commands	<code>remove_volume,</code> <code>remove_consistency_group</code>
Description	The volume (for <code>remove_volume</code>) or any volume in the group (<code>remove_consistency_group</code>) is mapped to an SDC
Action	Unmap before removing the volume or consistency group. Use <code>query_all_volumes</code> to check current mapping.

Use MDM IP address

Parameter	Description
Name	USE_MDM_IP
Message	Use cluster MDM physical IP to access the MDM
Commands	All cluster commands
Description	The command reached the Secondary MDM. Use the physical IP address to access the MDM.
Action	Add <code>--mdm_ip</code> to the commands

Command only in cluster

Parameter	Description
Name	CMD_ONLY_IN_CLUSTER
Message	Command can only be used in cluster mode
Commands	<code>switch_mdm_ownership,</code>
Description	This command can be issued only when in cluster mode
Action	Use <code>query_cluster</code> to check the current configuration

Command only in single mode

Parameter	Description
Name	CMD_ONLY_IN_SINGLE
Message	Command can only be used in single mode
Commands	MDM cluster commands
Description	This command can be issued in Single mode only
Action	Use <code>switch_mdm_ownership</code> to switch to single mode before issuing this command

Command error when cluster degraded

Parameter	Description
Name	CMD_ERROR_CLUSTER_DEGRADED
Message	Command cannot be used when a cluster is degraded
Commands	<code>switch_mdm_ownership</code>
Description	This command cannot be issued when the cluster is degraded
Action	Check the cluster state and hardware configuration to determine the reason for cluster degradation

Too many devices

Parameter	Description
Name	TOO_MANY_DEVICES
Message	There are too many devices for SDS
Commands	<code>add_sds, add_sds_device</code>
Description	Too many devices specified (<code>add_sds</code>), or the SDS already has the maximum number of allowed devices
Action	None

SDS device not found

Parameter	Description
Name	TGT_DEVICE_NOT_FOUND
Message	Could not find the SDS device
Commands	SDS device related commands
Description	SDS device was not found
Action	Check the command parameters. Use <code>query_sds</code> to view the device details.

License too long

Parameter	Description
Name	LICENSE_TOO_LONG
Message	The license key is too long. Please check your key and enter it again.
Commands	<code>set_license</code>
Description	The specified license key is too long
Action	Validate the specified license key with the one received from EMC

License error

Parameter	Description
Name	LICENSE_ERROR
Message	License key is corrupted
Commands	<code>set_license</code>
Description	The specified license key is invalid or does not match this version. Please contact Customer Support.
Action	Validate the specified license key with the one received from EMC

Unknown license version

Parameter	Description
Name	LICENSE_UNKNOWN_VERSION
Message	Unknown license version
Commands	<code>set_license</code>
Description	The specified license key is corrupted
Action	Validate the specified license key with the one received from EMC

License not set

Parameter	Description
Name	LICENSE_NOT_SET
Message	License has not been set
Commands	<code>query_license, add_sds, add_sds_device, set_data_copy_limit</code>
Description	License was not set. Product cannot be used.
Action	Set the license before continuing to work

Configuration exceeds new license

Parameter	Description
Name	CONFIG_EXCEEDS_NEW_LICENSE
Message	The current system configuration exceeds the license entitlements
Commands	<code>set_license</code>
Description	The specified license decreases the amount of licensed capacity. The current system capacity already exceeds the specified license.
Action	Contact EMC Support to receive a license for a larger amount of capacity

License capacity exceeded

Parameter	Description
Name	CAPACITY_LICENSE_EXCEEDED
Message	The operation could not be completed. The license capacity has been exceeded.
Commands	<code>add_sds, add_sds_device</code>
Description	Adding the SDS or device exceeds the current licensed capacity
Action	Contact EMC Support to receive a license for a larger amount of capacity

License expired

Parameter	Description
Name	LICENSE_TIME_EXCEEDED
Message	The license has expired
Commands	Most commands
Description	The system time-based license has expired
Action	Contact EMC Support to receive a new license

Installation ID mismatch

Parameter	Description
Name	INSTALL_ID_MISMATCH
Message	The license installation ID does not match the ID of this system
Commands	<code>set_license</code>
Description	The provided license key does not match the current installation
Action	Contact EMC Support

Customer ID mismatch

Parameter	Description
Name	CUSTOMER_ID_MISMATCH
Message	License customer ID does not match this system
Commands	<code>set_license</code>
Description	The provided license key does not match the current installation
Action	Contact EMC Support

Unsupported license version

Parameter	Description
Name	LICENSE_UNSUPPORTED_VERSION
Message	Unsupported license version
Commands	<code>set_license</code>
Description	The provided license key does not match the current installation
Action	Contact EMC Support

Volume decrease not supported

Parameter	Description
Name	VOL_DECREASE_NOT_SUPPORTED
Message	Volume capacity can only be increased
Commands	<code>modify_volume_capacity</code>
Description	The specified volume capacity is smaller than the existing volume capacity. Decreasing volume capacity is not supported.
Action	Use <code>query_all_volumes</code> to validate your current configuration

SDS device being removed

Parameter	Description
Name	TGT_DEV_BEING_REMOVED
Message	The SDS device is being removed
Commands	<pre>remove_sds, remove_sds_device, activate_sds_device, start_sds_device_test</pre>
Description	The specified SDS device is currently being removed. The command cannot be executed.
Action	Wait for the device to be removed

Cannot remove last SDS device

Parameter	Description
Name	CANNOT_REMOVE_LAST_SDS_DEVICE
Message	Last remaining SDS device cannot be removed
Commands	<pre>remove_sds_device</pre>
Description	The command attempts to remove the last remaining SDS device. This is an illegal operation.
Action	To remove the last remaining device, remove the SDS

Device not under removal

Parameter	Description
Name	DEV_NOT_UNDER_REMOVAL
Message	The SDS device is not being removed
Commands	<pre>abort_remove_sds</pre>
Description	The specified device is not in the process of being removed
Action	Check the command parameters

SDS already adding device

Parameter	Description
Name	TGT_ALREADY_ADDING_DEV
Message	A device is being added to this SDS
Commands	<code>add_sds_device, remove_sds</code>
Description	This operation cannot be performed while a device is being added to the SDS
Action	Wait for the device to be added

Invalid device ID

Parameter	Description
Name	INVALID_DEV_ID
Message	The device ID is invalid. Please use a valid device ID.
Commands	SDS device related commands
Description	The specified SDS device ID is invalid
Action	Use <code>query_sds</code> to determine the correct ID

Too many Protection Domains

Parameter	Description
Name	TOO_MANY_FDs
Message	There are too many Protection Domains
Commands	<code>add_protection_domain</code>
Description	Adding a Protection Domain will exceed the system limit of the allowed Protection Domains
Action	None

Protection Domain name in use

Parameter	Description
Name	FD_NAME_IN_USE
Message	Protection Domain name already in use. Please try a different name.
Commands	<code>add_protection_domain,</code> <code>rename_protection_domain</code>
Description	The specified Protection Domain name is already in use by another Protection Domain
Action	Use <code>query_all</code> to validate the existing names, and issue the command with another name

Protection Domain not found

Parameter	Description
Name	FD_NOT_FOUND
Message	Could not find Protection Domain
Commands	All Protection Domain related commands
Description	The specified Protection Domain name or ID do not match any existing Protection Domains
Action	Check the command parameters. Use <code>query_all</code> to validate the existing Protection Domain names.

Protection Domain has SDSs

Parameter	Description
Name	FD_HAS_TGTS
Message	Protection Domain has SDSs
Commands	<code>remove_protection_domain</code>
Description	The Protection Domain contains SDSs and cannot be removed
Action	Remove the SDSs before attempting to remove the Protection Domain

Not enough SDSs in Storage Pool

Parameter	Description
Name	NOT_ENOUGH_TGTS_IN_STORAGE_POOL
Message	Less than three devices from different SDSs are defined in this Storage Pool. Add devices to the Storage Pool from additional SDSs.
Commands	<code>add_volume</code>
Description	The Storage Pool must contain devices from at least three different SDSs in order to create a volume
Action	Add more devices to the Storage Pool before creating a volume

Remove in progress

Parameter	Description
Name	REMOVE_IN_PROGRESS
Message	Removal of the object is in progress. Please wait.
Commands	Multiple commands
Description	The operation cannot be performed, because the volume is being removed
Action	Wait for the volume to be removed

No network test results

Parameter	Description
Name	NET_TEST_NOT_FOUND
Message	Could not find network test results
Commands	<code>query_sds_network_test_results</code>
Description	The specified SDS has no network test results
Action	Check the command parameters to make sure that a <code>start_sds_network_test</code> was sent to the specified SDS. If this is the correct

Parameter	Description
	SDS, resend the <code>start_sds_network_test</code> command.

Network test in progress

Parameter	Description
Name	NET_TEST_IN_PROGRESS
Message	Network test in progress
Commands	<code>query_sds_network_test_results</code>
Description	The SDS network test has not been completed
Action	Wait for the test to be completed. Use the same query periodically until results are displayed.

SDS device already active

Parameter	Description
Name	TGT_DEV_ALREADY_ACTIVE
Message	The SDS device is already active
Commands	<code>activate_sds_device</code>
Description	At least one specified device is already active
Action	Use <code>query_sds</code> to view the device status

SDS device wrong test mode

Parameter	Description
Name	TGT_DEV_WRONG_TEST_MODE
Message	The SDS device is in incorrect test mode
Commands	<code>activate_sds_device</code>
Description	At least one specified device will automatically be activated when its test is completed

Parameter	Description
Action	Use <code>query_sds</code> to view the device status

SDS device wrong test state

Parameter	Description
Name	TGT_DEV_WRONG_TEST_STATE
Message	The SDS device test is not complete
Commands	<code>activate_sds_device</code>
Description	At least one specified device test is not yet complete. This device cannot be activated.
Action	Use <code>query_sds</code> to view the devices' status

SDS device test in progress

Parameter	Description
Name	TGT_DEV_TEST_IN_PROGRESS
Message	The SDS device test is in progress
Commands	<code>start_sds_device_test</code>
Description	At least one specified device test is in-progress. A new test for this device cannot be started now.
Action	Use <code>query_sds</code> to view the devices' test status

Volume allocation “busy” error

Parameter	Description
Name	VOL_ALLOC_ERROR_BUSY
Message	The system is busy. Retry later.
Commands	<code>add_volume</code>
Description	The MDM is attempting to recover a connection with an SDS. You cannot create a volume now.

Parameter	Description
Action	Use <code>query_all</code> to view the system status. Retry the command when the situation has returned to normal.

Capacity highly unbalanced

Parameter	Description
Name	CAPACITY_HIGHLY_UNBALANCED
Message	System capacity is unbalanced
Commands	<code>add_volume</code>
Description	<p>System capacity is unbalanced. This can be a temporary or permanent state.</p> <ul style="list-style-type: none"> • Temporary Due to adding or removing capacity, or due to disconnections. In this case, the system will automatically work in the background to correct the situation. • Permanent The capacity of the devices added to is highly unbalanced. This requires user intervention to correct the situation.
Action	If a rebalance is in progress, wait for it to finish and resubmit the command. If the situation persists, contact EMC support.

Volume creation failed

Parameter	Description
Name	VOL_CREATE_FAIL
Message	Could not create the volume
Commands	<code>add_volume</code>
Description	The volume creation failed
Action	Use <code>query_all</code> to validate the system state, and retry the command

Invalid password

Parameter	Description
Name	INVALID_PASSWORD
Message	Invalid password. Please try again.
Commands	Most commands
Description	The specified password is incorrect
Action	Check that you are using the correct password in the command

No permissions

Parameter	Description
Name	NO_PERMISSIONS
Message	You do not have permission to perform this operation. Please contact your system administrator for assistance.
Commands	Most commands
Description	The specified user does not have permissions to issue this command
Action	Contact the system administrator

Too many Storage Pools in Protection Domain

Parameter	Description
Name	TOO_MANY_STORAGE_POOLS_IN_PROTECTION_DOMAIN
Message	There are too many Storage Pools in Protection Domain
Commands	<code>add_storage_pool</code>
Description	Addition of another Storage Pool will exceed the system limit of allowed Storage Pools in a Protection Domain
Action	Use <code>query_protection_domain</code> to view the Storage Pools in the Protection Domain

Storage Pool already exists

Parameter	Description
Name	STORAGE_POOL_ALREADY_EXISTS
Message	Storage Pool already exists
Commands	<code>add_storage_pool</code>
Description	A Storage Pool with the specified name already exists in the specified Protection Domain
Action	Use <code>query_protection_domain</code> to view the Storage Pools in the Protection Domain, and choose a different name

Storage Pool not found

Parameter	Description
Name	STORAGE_POOL_NOT_FOUND
Message	Could not find Storage Pool
Commands	All Storage Pool related commands
Description	The specified Storage Pool was not found
Action	Use <code>query_protection_domain</code> to view the Storage Pools in the Protection Domain, and check the issued parameters

Storage Pool has devices

Parameter	Description
Name	STORAGE_POOL_HAS_DEVS
Message	The Storage Pool has SDS devices
Commands	<code>remove_storage_pool</code>
Description	The specified Storage Pool has SDS devices associated with it
Action	Remove the SDS devices before removing the Storage Pool

Storage Pool name already exists

Parameter	Description
Name	STORAGE_POOL_NAME_ALREADY_EXISTS
Message	Storage Pool name already exists
Commands	<code>rename_storage_pool</code>
Description	A Storage Pool with the specified new name already exists in the Protection Domain
Action	Use <code>query_protection_domain</code> to view the Storage Pools in the Protection Domain. Choose another name for the Storage Pool.

Invalid Storage Pool ID

Parameter	Description
Name	INVALID_STORAGE_POOL_ID
Message	Invalid Storage Pool ID
Commands	All Storage Pool related commands
Description	The specified Storage Pool ID is invalid
Action	Check the specified Storage Pool ID. Use <code>query_protection_domain</code> to find the correct ID, or use the Storage Pool name.

Protection Domain has Storage Pools

Parameter	Description
Name	FD_HAS_STORAGE_POOLS
Message	Protection Domain has Storage Pools
Commands	<code>remove_protection_domain</code>
Description	The Protection Domain has more than one Storage Pool associated with it
Action	Remove the Storage Pools before removing the Protection Domain

SDC has mappings

Parameter	Description
Name	INI_HAS_MAPPINGS
Message	SDC has mapped volume(s)
Commands	<code>remove_sdc</code>
Description	At least one volume is mapped to the specified SDC
Action	Remove the mapping before removing the SDC

Too many volumes in V-Tree

Parameter	Description
Name	TOO_MANY_VOLS_IN_VTREE
Message	There are too many volumes in the V-Tree
Commands	<code>snapshot_volume</code>
Description	Taking a snapshot of the specified volume will exceed the allowed system limit of snapshots per volume
Action	Use <code>query_volume</code> to view the current snapshots. Consider deleting some snapshots.

Too many snapshots in V-Tree

Parameter	Description
Name	TOO_MANY_SNAPS_IN_VTREE
Message	There are too many snapshots in the V-Tree
Commands	<code>snapshot_volume</code>
Description	Taking a snapshot of the specified volume will exceed the allowed system limit of snapshots per volume
Action	Contact EMC Support

No volume to delete

Parameter	Description
Name	NOTHING_TO_DO
Message	No volume to delete
Commands	<code>remove_volume</code>
Description	The combination of parameters resulted in an empty set of volumes to delete
Action	Use <code>query_volume</code> to view the current state, and review the command parameters accordingly

Too many devices in Storage Pool

Parameter	Description
Name	TOO_MANY_DEVICES_IN_STORAGE_POOL
Message	There are too many devices in Storage Pool
Commands	<code>add_sds, add_sds_device</code>
Description	Adding a device to the specified Storage Pool will exceed the allowed system limit of SDS devices per Storage Pool
Action	Use <code>query_sds</code> to find the association of devices to Storage Pools

Volume not found for consistency group

Parameter	Description
Name	VOL_NOT_FOUND_FOR_SNAP_GROUP
Message	No volumes were found for the given consistency group
Commands	<code>remove_consistency_group</code>
Description	No volume found for the specified consistency group

Parameter	Description
Action	Use <code>query_all_volumes</code> to view the existing consistency groups, and review command parameters accordingly

Too many IP addresses

Parameter	Description
Name	TOO_MANY_IPS
Message	There are too many IP addresses for SDS
Commands	<code>add_sds_ip</code>
Description	Addition of an IP address to the SDS exceeds the allowed system limit of IP addresses per SDS
Action	Use <code>query_sds</code> to view the SDS IP addresses

Cannot remove last SDS IP address

Parameter	Description
Name	LAST_IP
Message	SDS must have at least one IP address
Commands	<code>remove_sds_ip</code>
Description	An SDS must have at least one IP address. Cannot remove the last remaining IP address.
Action	Use <code>query_sds</code> to view the SDS IP addresses.

SDS IP address not found

Parameter	Description
Name	SDS_IP_NOT_FOUND
Message	SDS IP not found
Commands	<code>remove_sds_ip</code>

Parameter	Description
Description	The specified SDS IP address was not found
Action	Use <code>query_sds</code> to view the SDS IP addresses

Volume size too large

Parameter	Description
Name	VOL_SIZE_TOO_LARGE
Message	The volume size too large
Commands	<code>add_volume, modify_volume_capacity</code>
Description	The specified volume size is too large
Action	Use a smaller volume size

Capacity too low for snapshot

Parameter	Description
Name	CAPACITY_TOO_LOW_FOR_SNAP
Message	The capacity of the Storage Pool is too small to create new snapshots
Commands	<code>snapshot_volume</code>
Description	Snapshots are disabled when the free capacity in the Storage Pool is very low. The threshold is defined using the <code>set_capacity_alerts_threshold</code> command. The default threshold is 10% below the predefined spare.
Action	Add storage capacity, or free up space by removing some snapshots

IP address belongs to other SDS

Parameter	Description
Name	IP_BELONGS_TO_OTHER_TGT
Message	The specified IP address belongs to another SDS. Please use the correct IP address.

Parameter	Description
Commands	<code>add_sds, add_sds_ip</code>
Description	The specified IP address is already assigned to another SDS
Action	Check command parameters

Invalid port

Parameter	Description
Name	INVALID_PORT
Message	The specified SDS port is not in the valid range. Please try again with a valid port number.
Commands	<code>add_sds, add_sds_ip</code>
Description	The specified port must be greater than 1024
Action	Check command parameters

LIA package not installed

Parameter	Description
Name	LIA_PACKAGE_NOT_INSTALLED
Message	The package is not installed.
Description	You are trying to uninstall the LIA package, but the package is not currently installed.
Action	Check why are you trying to uninstall a component that is not installed. Verify that you have the correct package name for the package that you want to uninstall.

LIA multiple packages installed

Parameter	Description
Name	LIA_MULTIPLE_PACKAGES_INSTALLED
Message	More than one package is installed.
Description	More than one package of the specified component is installed.

Parameter	Description
Action	<p>Uninstall the packages manually:</p> <p>Linux:</p> <ol style="list-style-type: none"> Find the package name: <pre>rpm -qa grep -i lia</pre> <p>The LIA package name is displayed. For example:</p> <pre>EMC-ScaleIO- lia-2.50-0.30.el6.x86_64</pre> <ol style="list-style-type: none"> Uninstall the package: <pre>rpm -e <PACKAGE_NAME></pre> <p>Windows:</p> <ul style="list-style-type: none"> Windows Control Panel > Add/Remove programs > EMC-ScaleIO-lia

LIA command failed

Parameter	Description
Name	LIA_COMMAND_FAILED
Message	The command failed. Please try again.
Description	This is a general error message.
Action	<p>Look for more information about the error in the LIA log:</p> <p>Linux: /opt/emc/scaleio/lia/logs</p> <p>Windows: C:\Program Files\emc\scaleio\lia\logs</p>

LIA invalid password

Parameter	Description
Name	LIA_INVALID_PASSWORD
Message	Token authentication was not successful
Description	The wrong LIA token was used, and authentication failed.

Parameter	Description
Action	Verify that you have the correct LIA password (token).

LIA operation not permitted

Parameter	Description
Name	LIA_OPERATION_NOT_PERMITTED
Message	The operation is not permitted by current configuration
Description	LIA was configured to disallow the operation that you tried to perform.
Action	Contact your system administrator; change the LIA configuration in your system.

LIA file is too large

Parameter	Description
Name	LIA_FILE_IS_TOO_LARGE
Message	The file is too large to send back to the user.
Description	The file returned by the <code>get_info</code> command is larger than 500 MB, and therefore cannot be sent back to you.
Action	Contact Dell EMC support.

LIA wrong ID

Parameter	Description
Name	LIA_WRONG_ID
Message	LIA installation ID verification failed
Description	The LIA ID that was passed in the installation/uninstall package is different to the installation ID that LIA is currently using.
Action	<p>Edit the LIA's configuration file with LIA token and restart the LIA. The configuration file is found at:</p> <ul style="list-style-type: none"> Linux: <code>/opt/emc/scaleio/lia/cfg/cont.txt</code>

Parameter	Description
	<ul style="list-style-type: none"> Windows: C:\Program Files\emc\scaleio\lia\cfg\conf.txt

LIA disk does not exist

Parameter	Description
Name	LIA_DISK_DOES_NOT_EXIST
Message	The disk does not exist in the system
Description	The disk name that was passed with the <code>prepare_disk</code> command does not exist in the system
Action	Check that you are using the correct the disk name

SDS IP address not found

Parameter	Description
Name	TGT_IP_NOT_FOUND
Message	The SDS IP address cannot be found.
Commands	<code>modify_sds_ip, remove_sds_ip</code>
Description	You tried to remove or modify an SDS IP address that does not exist in the system.
Action	Verify that you are specifying the correct IP address in the command.

Bad threshold value

Parameter	Description
Name	BAD_THRESHOLD_VALUE
Message	The threshold value is out of range. Please enter a valid percentage value.
Commands	<code>set_capacity_alert_threshold</code>
Description	The legal range for the capacity alert threshold is a percentage value between 0

Parameter	Description
	and 100. The value specified for critical alerts must be less than the value for high alerts.
Action	Specify a value between 0 and 100. Ensure that the value for critical alerts is less than the value for high alerts.

Storage Pool has Volumes

Parameter	Description
Name	STORAGE_POOL_HAS_VOLS
Message	The Storage Pool has volumes. Please remove all the volumes before removing the Storage Pool.
Commands	<pre>remove_storage_pool remove_protection_domain</pre>
Description	Only empty Storage Pools can be removed.
Action	Remove all volumes before removing the Storage Pool or Protection Domain.

Protection Domain and Storage Pool mismatch

Parameter	Description
Name	FD_AND_SP_MISMATCH
Message	The specified Storage Pool is not in the specified Protection Domain.
Commands	Any command which uses the combination of Storage Pool and Protection Domain.
Description	The operation could not be performed because the combination of Storage Pool and Protection Domain is incorrect and the Storage Pool could not be found.
Action	Use the correct combination of Storage Pool and Protection Domain in the command. Use the command <code>query_all</code> to list all the Storage Pools to find this information.

SDS IP address already exists

Parameter	Description
Name	TGT_IP_ALREADY_EXISTS
Message	This SDS IP address already exists. Please use a different IP address.
Commands	<code>add_sds_ip</code>
Description	The IP address used in the command is already in use in the system.
Action	Verify that you are using the correct IP address in the command, and that the address has not been assigned to any other SDSs.

IP role already set

Parameter	Description
Name	ROLE_ALREADY_SET
Message	The IP role for this SDS has already been configured.
Commands	<code>modify_sds_ip</code>
Description	The IP role for the specified SDS has already been configured.
Action	Verify that you are configuring the intended SDS, and that you are specifying the correct IP address.

Cluster ID mismatch

Parameter	Description
Name	CLUSTER_ID_MISMATCH
Message	The system ID number that you provided does not match the actual system ID.
Commands	<code>query_properties</code> , <code>query_system</code>
Description	The system ID number has been modified, and does not match the ID specified in the command.

Parameter	Description
Action	No action required - this code is provided for information purposes for advanced users.

Device already exists

Parameter	Description
Name	DEV_ALREADY_EXISTS
Message	A device with the given name already exists in the SDS.
Commands	<code>add_sds_device</code>
Description	You tried to add a device to the system, using a name that is already defined in the SDS.
Action	Verify that the specified device has not already been added to the system.

Volume size is illegal

Parameter	Description
Name	VOL_SIZE_ILLEGAL
Message	The specified volume size is illegal. Volume size must be in 8 GB blocks.
Commands	<code>add_volume, modify_volume_size</code>
Description	You tried to define a volume size that is not a multiple of 8 GB. Volume size can only be defined in multiples of 8 GB.
Action	Specify volume size in blocks of 8 GB.

SDC must be disconnected

Parameter	Description
Name	INI_MUST_BE_DISCONNECTED
Message	The SDC must be disconnected.
Commands	<code>remove_sdc</code>

Parameter	Description
Description	Only SDCs that are currently inactive (disconnected) can be removed.
Action	This command is intended to remove old, disconnected SDCs. Do not remove active SDCs.

Invalid percentage

Parameter	Description
Name	INVALID_PERCENTAGE
Message	The percentage value that you provided is invalid. Please use a value between 0—100.
Commands	<pre>set_thick_volume_percentage</pre>
Description	The value that you entered was less than 0 or greater than 100.
Action	Use a value between 1 and 100 in the command.

Wrong receive group

Parameter	Description
Name	WRONG_RECEIVE_GROUP
Message	The command was sent to the wrong receive group due to component software mismatch.
Commands	All commands
Description	There are different software versions installed on some components in your system, and this is causing a software mismatch error.
Action	Verify that the same software version is installed on all components, and fix, if necessary.

Mismatched SW ID

Parameter	Description
Name	MISMATCHING_SWID
Message	The license contains a mismatch of the SWID number. Please contact Customer Support.

Parameter	Description
Commands	<code>set_license</code>
Description	The SWID number that you entered does not match your license.
Action	Contact Customer Support

Invalid license issuer

Parameter	Description
Name	INVALID_LICENSE_ISSUER
Message	The issuer of the license you are attempting to add does not match that of the product.
Commands	<code>set_license</code>
Description	There is a problem with your license.
Action	Contact Customer Support

Number of parallel messages is too low

Parameter	Description
Name	NUM_PARALLEL_MSG_TOO_LOW
Message	The number of parallel messages is too low. Please use a number in the range 1 - 6.
Commands	<code>start_sds_network_test</code>
Description	You used a number less than 1 in the command.
Action	Use a number in the range of 1 to 6 for parallel messages in the command.

Number of parallel messages is too high

Parameter	Description
Name	NUM_PARALLEL_MSG_TOO_HIGH
Message	The number of parallel messages is too high. Please use a number in the range 1 - 6.

Parameter	Description
Commands	<pre>start_sds_network_test</pre>
Description	You used a number greater than 6 in the command.
Action	Use a number in the range of 1 to 6 for parallel messages in the command.

Network test size is too high

Parameter	Description
Name	NETWORK_TEST_SIZE_TOO_HIGH
Message	The network test size is too high. Please use a test size less than 10.
Commands	<pre>start_sds_network_test</pre>
Description	You used a number greater than 10 in the command.
Action	Use a number less than 10 for test size in the command.

Network test length too long

Parameter	Description
Name	NETWORK_TEST_LENGTH_TOO_HIGH
Message	The network test length is too long. Please use a test length less than 43200 seconds.
Commands	<pre>start_sds_network_test</pre>
Description	You used a number greater than 43200 for test length in the command.
Action	Use a number less than 43200 for test length in the command.

Network test must limit either time or size

Parameter	Description
Name	NETWORK_TEST_MUST_LIMIT_EITHER_TIME_OR_SIZE
Message	The network test must limit either time or size.
Commands	<pre>start_sds_network_test</pre>
Description	Your command did not contain a value for time or size.
Action	Include a value for either time or size in the command.

Not enough SDSs in Protection Domain for test

Parameter	Description
Name	NOT_ENOUGH_TGTS_IN_FD_FOR_TEST
Message	To start the test, there must be at least 2 SDSs in the Protection Domain.
Commands	<pre>start_sds_network_test</pre>
Description	There are less than two SDSs in the Protection Domain, and therefore the test operation cannot be performed.
Action	Ensure that there are at least 2 SDSs in the Protection Domain before attempting to test it.

Not allowed in Storage Pool with devices

Parameter	Description
Name	NOT_ALLOWED_IN_SP_WITH_DEVS
Message	This operation is only allowed when there are no devices in the Storage Pool. Please remove all devices from the Storage Pool.
Commands	<pre>modify_zero_padding_policy</pre>

Parameter	Description
Description	You can only modify the zero padding policy of empty Storage Pools.
Action	Ensure that all devices are removed from the Storage Pool before you attempt to modify its zero padding policy.

License capacity mismatch

Parameter	Description
Name	LICENSE_CAPACITY_MISMATCH
Message	The license contains a mismatch of the capacity values for basic and advanced features. Please contact Customer Support.
Commands	<pre>set_license</pre>
Description	The capacity allowed for basic and advanced features in your license do not match your installation.
Action	Contact Customer Support.

Exceeds system capacity limitations

Parameter	Description
Name	EXCEED_SYSTEM_CAPACITY_LIMITATIONS
Message	The request exceeds system limitations
Commands	<pre>add_volume, modify_volume_capacity</pre>
Description	The command specifies a volume larger in size than the maximum system capacity.
Action	Remove one or more volumes in the system, to make room for the new one.

SDC mapped to too many volumes

Parameter	Description
Name	INI_MAPPED_TO_TOO_MANY_VOLS

Parameter	Description
Message	The SDC is mapped to too many volumes. Please remove some mapping.
Commands	<code>map_volume_to_sdc</code>
Description	You attempted to map more than the maximum allowed number of volumes (8192) to one or more SDCs.
Action	Avoid mapping more than the maximum allowed volumes to a single SDC.

Not enough devices in Storage Pool for removal

Parameter	Description
Name	NOT_ENOUGH_DEVICES_IN_STORAGE_POOL_FOR_REMOVAL
Message	Not enough devices in Storage Pool.
Commands	<code>remove_sds, remove_sds_device</code>
Description	Each Storage Pool must contain at least two devices. If there are two or less devices in the Storage Pool and you try to remove one, the command will fail.
Action	Add devices to the Storage Pool before trying to remove this one.

Invalid network limits

Parameter	Description
Name	INVALID_TGT_NETWORK_LIMITS
Message	Bad limits given. Overall must be larger than both rebuild and rebalance and all limits must be over 5MB
Commands	<code>sds_network_limits</code>
Description	The total (overall) limit must be greater than the sum of the Rebuild limit and the Rebalance limit. All limits must be greater than 5 MB.

Parameter	Description
Action	Ensure that limit values are greater than 5 MB, and that the overall limit value is greater than Rebuild limit+Rebalance limit.

A device is currently being removed

Parameter	Description
Name	ONE_TGT_DEV_BEING_REMOVED
Message	This command cannot be completed; An SDS device is currently being removed.
Commands	<code>activate_sds_device</code> with the parameter <code>activate_all_devices</code>
Description	If a device is in the process of being removed, you cannot use the <code>activate_all_devices</code> parameter to activate the remaining ones.
Action	Wait until the device removal is complete, and try again.

A device is already active

Parameter	Description
Name	ONE_TGT_DEV_ALREADY_ACTIVE
Message	This command cannot be completed; An SDS device is currently active.
Commands	<code>activate_sds_device</code> with the parameter <code>activate_all_devices</code>
Description	A device is already active.
Action	Do not use the <code>activate_all_devices</code> option in the command. Instead, specify each device individually in the command.

RAM Cache wrong state

Parameter	Description
Name	RMCACHE_WRONG_STATE
Message	Wrong RAM Cache state

Parameter	Description
Commands	<pre>enable_sds_rmcache disable_sds_rmcache set_sds_rmcache_size</pre>
Description	The cache is in transient state, so the requested operation cannot be executed.
Action	Wait for a few seconds and try again.

More than one mapping not allowed

Parameter	Description
Name	NOT_ALLOWED_MORE_THAN_ONE_MAPPING
Message	Only a single SDC may be mapped to this volume at a time
Commands	<pre>map_volume_to_sdc</pre>
Description	The volume is already mapped, and the <code>allow_multi_map</code> flag was not used in the command
Action	The volume is already mapped. Use the <code>allow_multi_map</code> flag to map the volume to additional SDCs.

At least one SDS failed

Parameter	Description
Name	AT_LEAST_ONE_TGT_FAILED
Message	At least one SDS failed
Commands	<pre>enable_sds_rmcache disable_sds_rmcache set_sds_rmcache_size</pre> <p>for the entire Protection Domain</p>
Description	You tried to enable/disable or change size of cache for all SDSs in the Protection Domain, and this failed for at least one of the SDSs
Action	Check the state of cache in all the SDSs, and try again for the specific SDS with the problem.

A device is in incorrect test state

Parameter	Description
Name	ONE_TGT_DEV_WRONG_TEST_STATE
Message	This command cannot be completed; An SDS device is currently in incorrect test mode
Commands	<code>activate_sds_device</code> with <code>activate_all_devices</code> parameter
Description	A device was not added with the <code>test_only</code> option, so it cannot be activated with this command.
Action	It will activate itself on its own. No action required.

A device test is in progress

Parameter	Description
Name	ONE_TGT_DEV_WRONG_TEST_MODE
Message	This command cannot be completed; An SDS device test is currently in progress
Commands	<code>activate_sds_device</code> with <code>activate_all_devices</code> parameter
Description	A device test is currently in progress, and the device cannot be activated until the test is finished.
Action	Wait for the device test to finish, and then try again.

Enterprise features not enabled

Parameter	Description
Name	ENTERPRISE_FEATURES_NOT_ENABLED
Message	Enterprise features are not enabled for this system.
Commands	Any command that requires a special license
Description	The command that you tried to use cannot be used with the type of license that you currently have activated in your system.

Parameter	Description
Action	Verify that you are using a license with enterprise features enabled. If problems persist, contact Customer Support.

Volume already mapped to an SDC

Parameter	Description
Name	VOL_ALREADY_MAPPED_TO_AN_INI
Message	The volume is already mapped to a SDC
Commands	<code>map_volume_to_sdc</code> with the <code>all_sdc</code> s option
Description	If the volume is already mapped to one or more SDCs, you cannot use the <code>all_sdc</code> s option.
Action	Remove the volume's mapping to the SDCs, and then try again.

SDS already exists and is being removed

Parameter	Description
Name	TGT_ALREADY_EXISTS_AND_BEING_REMOVED
Message	The SDS already exists and is being removed. Please wait for the operation to finish.
Commands	<code>add_sds</code>
Description	<p>If you try to add an SDS that already exists, and is in the process of being removed, this operation will fail.</p> <hr/> <p>Note</p> <p>If an <code>add_sds</code> command failed, the system will try to remove it automatically, without user intervention. Therefore, if you issue the same <code>add_sds</code> command twice in a row, and the first time failed, this return code may be generated (depending on why adding the SDS failed).</p> <hr/>
Action	Verify that you are adding the correct SDS. If you are adding an SDS which is in the process of being removed, wait for the removal

Parameter	Description
	process to finish before trying to add the SDS back to the system.

Invalid spare percentage

Parameter	Description
Name	INVALID_SPARE_PERCENTAGE
Message	The spare percentage value that you provided is invalid. Please use a value between 0 - 99.
Commands	<code>modify_spare_policy</code>
Description	The spare percentage required in the command is invalid
Action	Verify that correct input parameters (a value between 0-99) are used with the command

Invalid background device scanner bandwidth limit

Parameter	Description
Name	INVALID_SCANNER_BW_LIMIT
Message	The scanner bandwidth limit is invalid. Please use a value between 10KB - 1GB
Commands	<code>enable_background_device_scanner</code>
Description	The bandwidth value that you provided for the bandwidth limit parameter is invalid.
Action	Verify that correct input parameters (a value between 10KB–1GB) are used with the command

Zero padding with background device scanner data comparison mode

Parameter	Description
Name	ZEROPAD_AND_SCANNER
Message	Zero padding must be enabled in order to set scanner to Data Comparison mode

Parameter	Description
Commands	<code>enable_background_device_scanner</code>
Description	The background device scanner has two modes: device only, and data comparison mode. The Storage Pool must have zero padding enabled before you attempt to enable background device scanning in data comparison mode.
Action	Enable zero padding in the Storage Pool (you must do this before adding devices to the Storage Pool)

IP address already assigned to another SDS

Parameter	Description
Name	ADDRESS_BELONGS_TO_DIFFERENT_TGT
Message	The given address belongs to a different SDS. Please check the system configuration.
Commands	<code>add_sds, add_sds_ip</code>
Description	This message is returned if the specified IP address has already been assigned to another SDS in the system
Action	Check SDS network configuration and IP address assignments

Capacity too low for thin volumes

Parameter	Description
Name	CAPACITY_TOO_LOW_FOR_THIN_VOL
Message	Storage Pool reached critical capacity utilization. Unable to create new thin volumes.
Commands	<code>add_volume, modify_volume_capacity</code>
Description	Thin volumes cannot be allocated if the specified Storage Pool has reached the critical capacity level
Action	Add more devices to the Storage Pool

Too many Storage Pools in the system

Parameter	Description
Name	TOO_MANY_STORAGE_POOLS
Message	There are too many Storage Pools in the system
Commands	<code>add_storage_pool</code>
Description	Addition of another Storage Pool will exceed the system limit of allowed Storage Pools
Action	Remove unused Storage Pools. If the problem is not solved, install a new system.

Remote access to the MDM is blocked

Parameter	Description
Name	REMOTE_PERMISSION_DENIED
Message	Permission denied. Remote read-only limit state is enabled and is blocking this operation from a remote location. Run this command from the Master MDM host.
Commands	All
Description	Remote read-only limit state is enabled and is blocking this operation from a remote location
Action	Run the command from the Master MDM host

Cannot add a partitioned device

Parameter	Description
Name	TGT_ADD_DEV_IS_PARTITIONED
Message	Unable to add a device that was already partitioned
Commands	<code>add_sds, add_sds_device</code>
Description	The added device is partitioned and cannot be used by the system
Action	Remove partitions from the device, or add the partitioned device to the system

Cannot add a mounted device

Parameter	Description
Name	TGT_ADD_DEV_IS_MOUNTED
Message	Unable to add a device that was already mounted
Commands	<code>add_sds, add_sds_device</code>
Description	The added device is mounted and cannot be used by the system
Action	Unmount the device

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