Dell EMC VxFlex Ready Node

Version 2.x

CLI Reference Guide

P/N 302-004-648

REV 02

DELL EMC

Copyright © 2018 Dell Inc. or its subsidiaries. All rights reserved.

Published June 2018

Dell believes the information in this publication is accurate as of its publication date. The information is subject to change without notice.

THE INFORMATION IN THIS PUBLICATION IS PROVIDED "AS-IS." DELL MAKES NO REPRESENTATIONS OR WARRANTIES OF ANY KIND WITH RESPECT TO THE INFORMATION IN THIS PUBLICATION, AND SPECIFICALLY DISCLAIMS IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. USE, COPYING, AND DISTRIBUTION OF ANY DELL SOFTWARE DESCRIBED IN THIS PUBLICATION REQUIRES AN APPLICABLE SOFTWARE LICENSE.

Dell, EMC, and other trademarks are trademarks of Dell Inc. or its subsidiaries. Other trademarks may be the property of their respective owners. Published in the USA.

Dell EMC
Hopkinton, Massachusetts 01748-9103
1-508-435-1000 In North America 1-866-464-7381
www.DellEMC.com

CONTENTS

Preface **11**

Chapter 1 **SCLI Basics** **13**
Accessing SCLI 14
Command format 14
Syntax 15
Object names 16
Using SCLI in non-secure mode 16
Logging in 17
login 17
logout 19
Getting help 19
help 19

Chapter 2 **Device Commands** **21**
abort_remove_sds_device 22
activate_sds_device 22
add_sds_device 23
clear_sds_device_error 26
query_all_device_latency_meters 27
query_device_latency_meters 27
query_device_test 28
query_sds_device_info 29
remove_sds_device 30
rename_device 31
set_sds_device_led 32
start_device_test 33
update_device_original_path 34

Chapter 3 **Fault Set Commands** **37**
add_fault_set 38
clear_fault_set 39
query_all_fault_sets 39
query_fault_set 40
remove_fault_set 40
rename_fault_set 41

Chapter 4 **General Commands** **43**
query_license 44
query_remote_syslog 44
query_oscillating_failure_counter_parameters 44
reset_oscillating_failure_counters 45
set_cli_login_banner_preemptive_acceptance 47
set_license 47
set_login_banner 48
set_oscillating_failure_counter_parameters 48
set_remote_read_only_limit_state 50

set_syslog_facility..... 50
start_remote_syslog..... 51
stop_remote_syslog..... 51

Chapter 5 LDAP Commands 53
add_ldap_service..... 54
remove_ldap_group_from_role_assignment..... 55
remove_ldap_service..... 56
rename_ldap_service..... 57

Chapter 6 Protection Domain Commands 59
activate_protection_domain..... 60
add_protection_domain..... 60
inactivate_protection_domain..... 61
query_protection_domain..... 62
remove_protection_domain..... 62
rename_protection_domain..... 63

Chapter 7 RFcache Commands 65
disable_sds_rfcache..... 66
enable_sds_rfcache..... 66
set_rfcache_parameters..... 67

Chapter 8 SDC Commands 69
add_sdc..... 70
query_all_approved_sdc..... 70
query_all_sdc..... 71
query_restricted_sdc_mode..... 71
query_sdc..... 72
query_sdc_volume_limits..... 72
remove_sdc..... 73
rename_sdc..... 74
set_sdc_volume_limits..... 74
set_approved_sdc_ips..... 75

Chapter 9 SDS Commands 77
abort_remove_sds..... 78
disable_sds_rmcache..... 78
enable_sds_rmcache..... 79
modify_sds_ip_role..... 80
modify_sds_port..... 81
query_all_sds..... 81
query_network_latency_meters..... 82
query_sdc_to_sds_disconnections..... 82
query_sds..... 83
query_sds_connectivity_status..... 83
query_sds_network_test_results..... 84
remove_sds..... 84
rename_sds..... 85
set_drl_properties..... 86
set_sds_network_limits..... 87
set_sds_rmcache_size..... 88

show_certificate..... 89
start_sds_network_test..... 90

Chapter 10 Storage Pool Commands 91
add_storage_pool..... 92
disable_background_device_scanner..... 93
enable_background_device_scanner..... 94
modify_zero_padding_policy..... 95
query_storage_pool..... 96
remove_storage_pool..... 97
rename_storage_pool..... 98
reset_scanner_error_counters..... 99
set_capacity_alerts_threshold..... 99
set_rebalance_mode..... 100
set_rebalance_policy..... 101
set_rebuild_mode..... 103
set_rebuild_policy..... 104
set_rebuild_rebalance_parallelism..... 106
set_rmcache_usage..... 106
set_rmcache_write_handling_mode..... 108

Chapter 11 System Commands 109
abort_upgrade..... 110
add_certificate..... 110
add_standby_mdm..... 110
allow_commands_during_upgrade..... 112
approve_all_mdm_certificates..... 112
assign_ldap_groups_to_roles..... 112
enter_maintenance_mode..... 113
exit_maintenance_mode..... 114
finalize_upgrade..... 116
generate_certificate..... 116
generate_mdm_certificate..... 117
generate_mdm_csr_file..... 117
modify_cluster_virtual_ips..... 119
modify_management_ip..... 119
modify_spare_policy..... 120
modify_virtual_ip_interfaces..... 121
query_all..... 122
Output description..... 125
query_cluster..... 130
query_performance_parameters..... 131
query_properties..... 132
Object presets..... 134
Object properties..... 135
query_remote_read_only_limit_state..... 144
query_system_limits..... 144
query_upgrade..... 144
refresh_mdm_cluster_capabilities..... 145
remove_standby_mdm..... 145
rename_mdm..... 146
rename_system..... 146
replace_cluster_mdm..... 147
replace_mdm_security_files..... 149

set_component_authentication_properties....150
set_management_client_communication....150
set_performance_parameters....151
set_restricted_sdc_mode....152
start_upgrade....153
switch_cluster_mode....153
switch_mdm_ownership....155

Chapter 12 User Commands 157
add_user....158
delete_user....158
disable_admin....159
modify_user....159
query_user....160
query_user_authentication_properties....161
query_users....161
reset_password....161
set_password....162
set_user_authentication_method....163

Chapter 13 Volume Commands 165
add_volume....166
map_volume_to_sdc....167
modify_volume_capacity....168
query_all_volumes....169
query_volume....169
query_volume_tree....170
remove_volume....170
rename_volume....171
set_volume_rmcache_usage....172
snapshot_volume....173
unmap_volume_from_sdc....174

Chapter 14 VxFlex Ready Node AMS CLI 177
AMS CLI....178
Syntax....178
AMS CLI Help....179
AMS CLI commands....179
abort_replace_nodes_certificates....179
add_sds_device....179
add_standby_manager....180
cache_storage_pool....180
clear_physical_drive_errors....181
decreaseDataNicsToTwo....181
download_logs_to_ams....182
download_logs_to_client....182
export_trusted_ssh_keys....182
generate_certificate_request....183
get_log_collection_status....183
increaseDataNicsToFour....184
query_all_<option>....184
--query_<option>....188
recover_system....190
remove_standby_manager....191

remove_virtual_disk....191
replace_ams_certificate.... 191
replace_nodes_certificates....192
replace_svm_deploy_ova....192
replace_svm_deploy_ova_status....192
replace_svm_start.... 193
replace_svm_task_status.... 193
set_ams_secure_mode.... 193
set_emergency_password.... 194
set_mdm_monitoring_user.... 194
set_node_sampling_credentials....195
set_recovery_password....195
start_log_collection.... 196
take_ownership....197
turn_disk_led 198
turn_node_led....198
upgrade_start.... 199
upgrade_task_status.... 199
upgrade_upload_tar....199
use_as_cache....200

Chapter 15 Return messages 201
Return messages overview....202
Message list.... 202
SDS device name changed.... 202
Success....202
No resources.... 203
Timeout.... 203
Already exists.... 203
Communication error....204
Wrong reconfiguration mode....204
SDS add device “open” error....204
SDS add device size problem....204
SDS add device IO error....205
SDS actively attach to this MDM.... 205
SDS already attached to this MDM.... 205
SDS active attach to other MDM.... 206
SDS already attached to other MDM....206
SDS not found.... 207
Volume not found.... 207
SDC not found....207
Volume already mapped to SDC....208
Volume already mapped to all SDCs....208
Volume not mapped to SDC....208
Volume mapped to all SDCs....209
Too many mappings....209
Invalid volume ID....209
Invalid SDS ID....210
Invalid SDC ID.... 210
Host not found.... 210
Duplicate host name.... 211
Address and port in use....211
Too many SDSs in Protection Domain....211
Too many SDSs....211
Too many volumes in Protection Domain....212

Too many volumes....212
SDS name in use.... 212
Volume name in use....213
Duplicate SDS device name....213
Duplicate SDC IP address....213
SDS not under removal.... 214
SDS being removed....214
Volume mapped....214
Use MDM IP address....215
Command only in cluster.... 215
Command only in single mode.... 216
Command error when cluster degraded....216
Too many devices....216
SDS device not found....217
License too long.... 217
License error.... 217
Unknown license version.... 218
License not set....218
Configuration exceeds new license....218
License capacity exceeded....219
License expired.... 219
Installation ID mismatch.... 219
Customer ID mismatch.... 220
Unsupported license version....220
Volume decrease not supported.... 220
SDS device being removed....221
Cannot remove last SDS device.... 221
Device not under removal....221
SDS already adding device....222
Invalid device ID....222
Too many Protection Domains....222
Protection Domain name in use.... 223
Protection Domain not found....223
Protection Domain has SDSs.... 223
Not enough SDSs in Storage Pool.... 224
Remove in progress.... 224
No network test results.... 224
Network test in progress.... 225
SDS device already active.... 225
SDS device wrong test mode....225
SDS device wrong test state.... 226
SDS device test in progress....226
Volume allocation “busy” error.... 226
Capacity highly unbalanced....227
Volume creation failed.... 227
Invalid password.... 228
No permissions.... 228
Too many Storage Pools in Protection Domain....228
Storage Pool already exists.... 229
Storage Pool not found....229
Storage Pool has devices....229
Storage Pool name already exists....230
Invalid Storage Pool ID.... 230
Protection Domain has Storage Pools.... 230
SDC has mappings.... 231
Too many volumes in V-Tree.... 231

Too many snapshots in V-Tree.....231
No volume to delete.....232
Too many devices in Storage Pool.....232
Volume not found for consistency group.....232
Too many IP addresses.....233
Cannot remove last SDS IP address.....233
SDS IP address not found.....233
Volume size too large.....234
Capacity too low for snapshot.....234
IP address belongs to other SDS.....234
Invalid port.....235
LIA package not installed.....235
LIA multiple packages installed.....235
LIA command failed.....236
LIA invalid password.....236
LIA operation not permitted.....237
LIA file is too large.....237
LIA wrong ID.....237
LIA disk does not exist.....238
SDS IP address not found.....238
Bad threshold value.....238
Storage Pool has Volumes.....239
Protection Domain and Storage Pool mismatch.....239
SDS IP address already exists.....239
IP role already set.....240
Cluster ID mismatch.....240
Device already exists.....240
Volume size is illegal.....241
SDC must be disconnected.....241
Invalid percentage.....241
Wrong receive group.....242
Mismatched SW ID.....242
Invalid license issuer.....243
Number of parallel messages is too low.....243
Number of parallel messages is too high.....243
Network test size is too high.....244
Network test length too long.....244
Network test must limit either time or size.....244
Not enough SDSs in Protection Domain for test.....245
Not allowed in Storage Pool with devices.....245
License capacity mismatch.....245
Exceeds system capacity limitations.....246
SDC mapped to too many volumes.....246
Not enough devices in Storage Pool for removal.....247
Invalid network limits.....247
A device is currently being removed.....247
A device is already active.....248
RAM Cache wrong state.....248
More than one mapping not allowed.....248
At least one SDS failed.....249
A device is in incorrect test state.....249
A device test is in progress.....250
Enterprise features not enabled.....250
Volume already mapped to an SDC.....250
SDS already exists and is being removed.....251
Invalid spare percentage.....251

Invalid background device scanner bandwidth limit.....252
Zero padding with background device scanner data comparison mode..... 252
IP address already assigned to another SDS.....253
Capacity too low for thin volumes.....253
Too many Storage Pools in the system.....253
Remote access to the MDM is blocked.....254
Cannot add a partitioned device..... 254
Cannot add a mounted device..... 254

Index **257**

Preface

As part of an effort to improve its product lines, Dell 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.

Contact your Dell EMC technical support professional if a product does not function properly or does not function as described in this document.

Note

This document was accurate at publication time. Go to Dell EMC Online Support (https://support.emc.com) to ensure that you are using the latest version of this document.

Previous versions of Dell EMC VxFlex OS were marketed under the name Dell EMC ScaleIO.

Similarly, previous versions of Dell EMC VxFlex Ready Node were marketed under the name Dell EMC ScaleIO Ready Node.

References to the old names in the product, documentation, or software, etc. will change over time.

Note

Software and technical aspects apply equally, regardless of the branding of the product.

Related documentation

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

The following Dell EMC publication sets provide information about your VxFlex OS or VxFlex Ready Node product:

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

You can download the release notes, the document sets, and other related documentation from Dell EMC Online Support.

Typographical conventions

Dell 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)

Italic	Used for full titles of publications referenced in text
`Monospace`	Used for: • System code • System output, such as an error message or script • Pathnames, filenames, prompts, and syntax • Commands and options
Monospace italic	Used for variables
`Monospace bold`	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

Where to get help

Dell EMC support, product, and licensing information can be obtained as follows:

Product information

For documentation, release notes, software updates, or information about Dell EMC products, go to Dell EMC Online Support at https://support.emc.com.

Technical support

Go to Dell EMC Online Support and click Service Center. You will see several options for contacting Dell EMC Technical Support. Note that to open a service request, you must have a valid support agreement. Contact your Dell EMC sales representative for details about obtaining a valid support agreement or with questions about your account.

Your comments

Your suggestions will help us continue to improve the accuracy, organization, and overall quality of the user publications. Send your opinions of this document to techpubcomments@emc.com.

CHAPTER 1

SCLI Basics

This section explains the basic concepts for using the VxFlex OS 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

VxFlex OS 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`
XenServer	`siocli`

Before using most SCLI commands, you must log in using this 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.

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 following command syntax is mandatory:

```
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 similar to 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

VxFlex OS 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 VxFlex OS GUI.

It is recommended 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 VxFlex OS 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 *VxFlex OS 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 AMS do not reside on the same server, add the `--mdm_ip` parameter with the IP address of the AMS server to all CLI commands.

Example:

```
scli --mdm_ip 10.10.10.3 --login --username admin --password
password1
```

You will be prompted to enter the password.

Note

For AMS login, the password is created during the installation of the AMS.

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. For example:

Log in to the AMS from a local Linux AMS server:

```
/opt/emc/scaleio/ams/webapps/ROOT/resources/scli --login --username
admin --password <AMS_admin_password>
```

Log in to the AMS on the AMS server via SSH:

```
/opt/emc/scaleio/ams/webapps/ROOT/resources/scli --login --username
admin --password <AMS_admin_Password> --mdm_ip <AMS_IP>
```

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

Log in to the AMS from a local Linux AMS server:

```
/opt/emc/scaleio/ams/webapps/ROOT/resources/scli --login --username
admin --password Scaleio123
```

Log in to the AMS on the AMS server via SSH:

```
/opt/emc/scaleio/ams/webapps/ROOT/resources/scli --login --username
admin --password Scaleio123 --mdm_ip 10.136.247.106
```

Sample expected output:

```
Logged in. User role is Administrator. System ID is 0000000000000000
```

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 --mdm_port 6611
```

Example

```
scli --logout --mdm_port 6611
```

Getting help

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

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.

- abort_remove_sds_device 22
- activate_sds_device 22
- add_sds_device 23
- clear_sds_device_error 26
- query_all_device_latency_meters 27
- query_device_latency_meters 27
- query_device_test 28
- query_sds_device_info 29
- remove_sds_device 30
- rename_device 31
- set_sds_device_led 32
- start_device_test 33
- update_device_original_path 34

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>)))
   --mdm_port 6611
```

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 --mdm_port 6611
```

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)
--mdm_port 6611
```

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 --mdm_port 6611
```

add_sds_device

Add a storage device to an SDS.

WARNING

During execution of the command, VxFlex OS 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]
  --mdm_port 6611
```

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, VxFlex OS 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 --mdm_port 6611
```

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

VxFlex OS 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 VxFlex OS 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)
   --mdm_port 6611
```

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 --mdm_port 6611
```

Example (all devices)

```
scli --mdm_ip 192.168.1.200 --clear_sds_device_error
--clear_all --sds_ip 192.168.1.7 --mdm_port 6611
```

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>)]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>])
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>)) --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>)))
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

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)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>)))
   --mdm_port 6611
```

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 --
mdm_port 6611
```

CHAPTER 3

Fault Set Commands

This section contains commands for managing Fault Sets.

- add_fault_set 38
- clear_fault_set 39
- query_all_fault_sets 39
- query_fault_set 40
- remove_fault_set 40
- rename_fault_set 41

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 *VxFlex OS 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>]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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

VxFlex OS 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 VxFlex OS 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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>)
--mdm_port 6611
```

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 --
mdm_port 6611
```

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>))
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>))
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

CHAPTER 4

General Commands

This section contains general CLI commands.

- query_license 44
- query_remote_syslog 44
- query_oscillating_failure_counter_parameters 44
- reset_oscillating_failure_counters 45
- set_cli_login_banner_preemptive_acceptance 47
- set_license 47
- set_login_banner 48
- set_oscillating_failure_counter_parameters 48
- set_remote_read_only_limit_state 50
- set_syslog_facility 50
- start_remote_syslog 51
- stop_remote_syslog 51

query_license

Retrieve information about current license restrictions.

Syntax

```
scli --query_license
   --mdm_port 6611
```

Parameters

None.

Example

```
scli --mdm_ip 192.168.1.200 --query_license --mdm_port 6611
```

query_remote_syslog

Retrieve the remote syslog module state and configuration.

Syntax

```
scli --query_remote_syslog
   --mdm_port 6611
```

Parameters

None.

Example

```
scli --query_remote_syslog --mdm_port 6611
```

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>))
   --mdm_port 6611
```

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 --mdm_port 6611
```

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)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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)
   --mdm_port 6611
```

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 --
mdm_port 6611
```

set_license

Set the VxFlex OS 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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

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

```
scli --set_login_banner (--filename <FILE> | --remove_banner)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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
<NUM OF FAILURES IN INTERVAL>
   --mdm_port 6611
```

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 --mdm_port 6611
```

set_remote_read_only_limit_state

Configure the VxFlex OS 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 configure the system.

Syntax

```
scli --set_remote_read_only_limit_state --
remote_read_only_limit_state {enabled | disabled}
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

stop_remote_syslog

Stop posting events to a remote syslog server.

Syntax

```
scli --stop_remote_syslog --remote_syslog_server_ip <IP>
   --mdm_port 6611
```

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 --
mdm_port 6611
```

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

VxFlex OS 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]
   --mdm_port 6611
```

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" --mdm_port 6611
```

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]
   --mdm_port 6611
```

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" --mdm_port 6611
```

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)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

CHAPTER 6

Protection Domain Commands

This section contains commands for managing Protection Domains.

- activate_protection_domain 60
- add_protection_domain 60
- 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]
   --mdm_port 6611
```

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 --
mdm_port 6611
```

add_protection_domain

Add a Protection Domain.

Syntax

```
scli --add_protection_domain
  [--protection_domain_name <NAME>]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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

VxFlex OS 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 VxFlex OS 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]
   --mdm_port 6611
```

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 --
mdm_port 6611
```

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>) --mdm_port 6611
```

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 --mdm_port 6611
```

remove_protection_domain

Remove a Protection Domain from the VxFlex OS 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>)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>) --new_name <NAME>
   --mdm_port 6611
```

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. --
mdm_port 6611
```

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.

- disable_sds_rfcache 66
- enable_sds_rfcache 66
- set_rfcache_parameters 67

disable_sds_rfcache

Disable the RFcache 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>])) --mdm_port 6611
```

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 --mdm_port 6611
```

enable_sds_rfcache

Enable RFcache 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>])) --mdm_port 6611
```

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 --mdm_port 6611
```

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>]
   --mdm_port 6611
```

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 --mdm_port 6611
```

CHAPTER 8

SDC Commands

This section contains commands for managing SDCs.

- add_sdc 70
- query_all_approved_sdc 70
- query_all_sdc 71
- query_restricted_sdc_mode 71
- query_sdc 72
- query_sdc_volume_limits 72
- remove_sdc 73
- rename_sdc 74
- set_sdc_volume_limits 74
- set_approved_sdc_ips 75

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>]
   --mdm_port 6611
```

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 VxFlex OS 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 --mdm_port
6611
```

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
   --mdm_port 6611
```

Parameters
None.

Example

```
scli --query_all_approved_sdc --mdm_port 6611
```

query_all_sdc

Retrieve information about all SDCs in the system.

Syntax

```
scli --query_all_sdc
   --mdm_port 6611
```

Parameters
None.

Example

```
scli --mdm_ip 192.168.1.200 --query_all_sdc --mdm_port 6611
```

query_restricted_sdc_mode

Query whether restricted SDC mode is enabled or disabled in the VxFlex OS 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
   --mdm_port 6611
```

Parameters
None.

Example

```
scli --query_restricted_sdc_mode --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --
mdm_port 6611
```

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>)
   --mdm_port 6611
```

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
vol1 --sdc_ip 192.168.1.3
```

remove_sdc

Remove an SDC from VxFlex OS.

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>)
   --mdm_port 6611
```

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 VxFlex OS 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 VxFlex OS 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 --mdm_port 6611
```

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>
   --mdm_port 6611
```

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
--mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port
6611
```

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

CHAPTER 9

SDS Commands

This section contains commands for managing SDSs.

- abort_remove_sds 78
- disable_sds_rmcache 78
- enable_sds_rmcache 79
- modify_sds_ip_role 80
- modify_sds_port 81
- query_all_sds 81
- query_network_latency_meters 82
- query_sdc_to_sds_disconnections 82
- query_sds 83
- query_sds_connectivity_status 83
- query_sds_network_test_results 84
- remove_sds 84
- rename_sds 85
- set_drl_properties 86
- set_sds_network_limits 87
- set_sds_rmcache_size 88
- show_certificate 89
- start_sds_network_test 90

abort_remove_sds

Abort the removal of an SDS from a VxFlex OS 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

```
cli --abort_remove_sds (--sds_id <ID> | --sds_name <NAME>| --sds_ip
<IP> [--sds_port <PORT>])
   --mdm_port 6611
```

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
--mdm_port 6611
```

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]
  --mdm_port 6611
```

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 --mdm_port 6611
```

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 --
mdm_port 6611
```

---

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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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 --
mdm_port 6611
```

---

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}
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

query_all_sds

Retrieve information about all SDSs in the system.

```
scli --query_all_sds
   --mdm_port 6611
```

Syntax

Parameters

None.

Example

```
scli --mdm_ip 192.168.1.200 --query_all_sds --mdm_port 6611
```

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>])
   --mdm_port 6611
```

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 --mdm_port 6611
```

query_sdc_to_sds_disconnections

Retrieve information regarding any SDC-SDS disconnections.

Syntax

```
scli --query_sdc_to_sds_disconnections
   --mdm_port 6611
```

Parameters

None.

Example

```
scli --query_sdc_to_sds_disconnections --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --
mdm_port 6611
```

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>)
   --mdm_port 6611
```

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
--mdm_port 6611
```

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>])
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>])
   --mdm_port 6611
```

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 --
mdm_port 6611
```

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.

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

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)
   --mdm_port 6611
```

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 --
mdm_port 6611
```

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.

⚠WARNING

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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 *VxFlex OS 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 --mdm_port 6611
```

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>]
   --mdm_port 6611
```

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 --
mdm_port 6611
```

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>]
   --mdm_port 6611
```

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 --mdm_port 6611
```

CHAPTER 10

Storage Pool Commands

This section contains commands for managing Storage Pools.

- add_storage_pool 92
- disable_background_device_scanner 93
- enable_background_device_scanner 94
- modify_zero_padding_policy 95
- query_storage_pool 96
- remove_storage_pool 97
- rename_storage_pool 98
- reset_scanner_error_counters 99
- set_capacity_alerts_threshold 99
- set_rebalance_mode 100
- set_rebalance_policy 101
- set_rebuild_mode 103
- set_rebuild_policy 104
- set_rebuild_rebalance_parallelism 106
- set_rmcache_usage 106
- set_rmcache_write_handling_mode 108

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}]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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

VxFlex OS 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 VxFlex OS 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>)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>]
  --mdm_port 6611
```

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 --mdm_port
6611
```

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 *VxFlex OS 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)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>)
   --mdm_port 6611
```

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
--mdm_port 6611
```

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>)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 sp120 --reset_data_compare_error_counter --
mdm_port 6611
```

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>))
   --mdm_port 6611
```

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 --mdm_port 6611
```

set_rebalance_mode

Enable or disable rebalancing of the specified Storage Pool.

WARNING

Rebalancing is an essential part of the VxFlex OS 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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 sp1 --policy favor_application_io --
bandwidth_limit 5120 --mdm_port 6611
```

set_rebuild_mode

Enable or disable rebuilds in the specified Storage Pool.

WARNING

Rebuilds are an essential part of the VxFlex OS 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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 /IOs 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 --mdm_port 6611
```

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>)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --
mdm_port 6611
```

CHAPTER 11

System Commands

This section contains commands for managing the system.

- abort_upgrade....110
- add_certificate....110
- add_standby_mdm....110
- allow_commands_during_upgrade....112
- approve_all_mdm_certificates....112
- assign_ldap_groups_to_roles....112
- enter_maintenance_mode....113
- exit_maintenance_mode....114
- finalize_upgrade....116
- generate_certificate....116
- generate_mdm_certificate....117
- generate_mdm_csr_file....117
- modify_cluster_virtual_ips....119
- modify_management_ip....119
- modify_spare_policy....120
- modify_virtual_ip_interfaces....121
- query_all....122
- query_cluster....130
- query_performance_parameters....131
- query_properties....132
- query_remote_read_only_limit_state....144
- query_system_limits....144
- query_upgrade....144
- refresh_mdm_cluster_capabilities....145
- remove_standby_mdm....145
- rename_mdm....146
- rename_system....146
- replace_cluster_mdm....147
- replace_mdm_security_files....149
- set_component_authentication_properties....150
- set_management_client_communication....150
- set_performance_parameters....151
- set_restricted_sdc_mode....152
- start_upgrade....153
- switch_cluster_mode....153
- switch_mdm_ownership....155

abort_upgrade

Stop an upgrade that is in process.

Syntax

```
scli --abort_upgrade
[--use_nonsecure_communication]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>
   --mdm_port 6611
```

Parameters

--certificate_file *<FILE>*

File name of the Root or Trusted Certificate

Example

```
scli --add_certificate --certificate_file CAcert-cacert.pem --
mdm_port 6611
```

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]
    --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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
--mdm_port 6611
```

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
   --mdm_port 6611
```

Example

```
scli --approve_all_mdm_certificates --mdm_port 6611
```

assign_ldap_groups_to_roles

Map LDAP groups to VxFlex OS 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 VxFlex OS 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]
   --mdm_port 6611
```

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"
--mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --
mdm_port 6611
```

finalize_upgrade

Finalize the upgrade process.

Syntax

```
scli --finalize_upgrade
  [--use_nonsecure_communication]
   --mdm_port 6611
```

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 --mdm_port
6611
```

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>])
   --mdm_port 6611
```

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 --mdm_port
6611
```

generate_mdm_certificate

Create a new self-signed certificate and private key for the specfied 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>)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port 6611 --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.

Syntax

```
scli --modify_cluster_virtual_ips (--cluster_virtual_ip <IP> | --
clear_all)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port
6611
```

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. VxFlex OS 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 VxFlex OS system, run:

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

4. vSphere: Using the vSphere web plug-in interface, unregister VxFlex OS 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, VxFlex OS 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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>)
   --mdm_port 6611
```

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 --mdm_port 6611
```

query_all

Retrieve aggregated information about all objects in all Protection Domains.

Syntax

```
scli --query_all
   --mdm_port 6611
```

Parameters

None.

Example

```
scli --mdm_ip 192.168.1.200 --query_all --mdm_port 6611
```

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: 2e1fefd300000000) 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: 2e1fefd400000001) 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: 2e1fefd500000002) 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 VxFlex OS 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: • enabled: read-only access • disabled: full read-write access
Management Clients secure communication	The status of the enabled/disabled
TLS version	

System Settings	
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: • 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 • 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	Indicates whether RFcache is enabled/disabled in the Protection Domain. If RFcache is enabled, the following information is displayed: • 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	Lists the following information for each Storage Pool: • 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

Storage Pool	
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
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
n 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.
n SDS nodes have connection state 'Connected'	The number of SDS nodes currently connected to the MDM
x TB (*y* GB) total capacity	The total amount of available raw storage This does not represent the total capacity available for volume allocation.
x TB (*y* GB) unused capacity	The quantity of raw capacity in the system that can be earmarked for specific purposes,

SDS Summary	
	such as Spare, or used for new volume creation
x Bytes snapshots capacity	The quantity of capacity used for storing snapshots
x TB (*y* GB) in-use capacity	The total quantity of healthy, degraded, and failed capacity
x Bytes thin capacity	The quantity of capacity currently needed for storage purposes
x TB (*y* GB) protected capacity	The quantity of capacity that is fully protected (primary and secondary copies of the data exist)
x Bytes failed capacity	The quantity of capacity that is not available at all (neither primary, nor secondary copies)
x Bytes degraded-failed capacity	The quantity of degraded-failed 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 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,

SDS Summary	
	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
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 `modify_sds_device_capacity` 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

SDS Summary	
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
   --mdm_port 6611
```

Parameters

None.

Example

```
scli --mdm_ip 192.168.1.200 --query_cluster --mdm_port 6611
```

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: • 1_node • 3_node • 5_node
State	State of the cluster: • Normal • Degraded (one or more cluster members are down or inactive)
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	• Normal • Error • Disconnected • Not synchronized
Tie-breaker status	• 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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port
6611
```

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						

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
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						
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	

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
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	
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	

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
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				
RMCACHE_ENTRY_EVICTION_SIZE_COUNT_IN_KB	x	x		x	x				
RMCACHE_BIG_BLOCK_EVICTION_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_128KB_ENTRIES	x	x		x	x				
RMCACHE_4KB_ENTRY_COUNT RMCACHE_8KB_ENTRY_COUNT RMCACHE_16KB_ENTRY_COUNT RMCACHE_32KB_ENTRY_COUNT	x	x		x	x				

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
RMCACHE_64KB_ENTRY_COUNT RMCACHE_128KB_ENTRY_COUNT									
RMCACHE_ENTRY_EVICTION_COUNT	x	x		x	x				
RMCACHE_BIG_BLOCK_EVICTION_COUNT	x	x		x	x				
RMCACHE_NO_EVICTION_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_VOLUMES	x	x	x						
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							

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
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								
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								

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
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							
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						

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
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				
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		

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
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		
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

Property	Sys	PD	SP	FS	SDS	SDC	Vol	Dev	V-Tree
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
   --mdm_port 6611
```

Parameters
None.

Example

```
scli --query_remote_read_only_limit_state --mdm_port 6611
```

query_system_limits

Retrieve information about the system limits.

Syntax

```
scli --query_system_limits
   --mdm_port 6611
```

Parameters
None.

Example

```
scli --query_system_limits --mdm_port 6611
```

query_upgrade

Retrieve information about the upgrade process.

Syntax

```
scli --query_upgrade
   [--use_nonsecure_communication]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

Parameters

None.

Example

```
scli --refresh_mdm_cluster_capabilities
```

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>)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>)
   --mdm_port 6611
```

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 --
mdm_port 6611
```

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>
   --mdm_port 6611
```

Parameters

--new_name *<NAME>*

New name to associate with the system.

Example

```
scli --rename_system --new_name sio-prod-sys2 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

replace_mdm_security_files

Replace the MDM's security certificate and key. The replacement certificate can be either a self-generated and self-signed certificate, or a certificate generated and 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, and the entire workflow, see the *VxFlex OS User Guide*.

Syntax

```
scli --replace_mdm_security_files (--target_mdm_id <ID> | --
target_mdm_ip <IP> [--target_mdm_port <PORT>] | --target_mdm_name
<NAME>)
   --mdm_port 6611
```

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 --
mdm_port 6611
```

set_component_authentication_properties

Enable or disable component authentication properties.

Syntax

```
scli --set_component_authentication_properties (--
use_authentication | --dont_use_authentication)
   --mdm_port 6611
```

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
--mdm_port 6611
```

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)
   --mdm_port 6611
```

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 --mdm_port 6611
```

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}
   --mdm_port 6611
```

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 *VxFlex OS Performance Fine-Tuning Technical Notes*.

Example

```
scli --set_performance_parameters --all_sds --all_sdc --profile
high_performance --mdm_port 6611
```

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} --mdm_port 6611
```

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 --
mdm_port 6611
```

start_upgrade

Start the upgrade process.

Syntax

```
scli --start_upgrade
  [--use_nonsecure_communication]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>)
   --mdm_port 6611
```

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 --
mdm_port 6611
```

CHAPTER 12

User Commands

This section contains commands for managing users.

- add_user 158
- delete_user 158
- disable_admin 159
- modify_user 159
- query_user 160
- query_user_authentication_properties 161
- query_users 161
- reset_password 161
- set_password 162
- set_user_authentication_method 163

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}
--mdm_port 6611
```

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 *VxFlex OS User Guide*.

Example

```
scli --add_user --username siouser2 --user_role Configure --
mdm_port 6611
```

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>) --mdm_port
6611
```

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 --mdm_port 6611
```

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]
  --mdm_port 6611
```

Parameters

`--i_am_sure`

Skip the safety questions for command execution.

Example

```
scli --disable_admin --i_am_sure --mdm_port 6611
```

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} --mdm_port 6611
```

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 *VxFlex OS User Guide*.

Example

```
scli --modify_user --username siouser3 --user_role Monitor -
mdm_port 6611
```

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>)
   --mdm_port 6611
```

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 --mdm_port 6611
```

query_user_authentication_properties

Retrieve information about LDAP services configured in the system.

Syntax

```
scli --query_user_authentication_properties
   --mdm_port 6611
```

Parameters

None.

Example

```
scli --query_user_authentication_properties --mdm_port 6611
```

query_users

Display all the users defined in the system, with their roles and user ID.

Syntax

```
scli --query_users
   --mdm_port 6611
```

Parameters

None.

Example

```
scli --query_users --mdm_port 6611
```

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>) --
mdm_port 6611
```

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 --mdm_port 6611
```

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>]
   --mdm_port 6611
```

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 --
mdm_port 6611
```

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.

WARNING

Use this command with caution. The operation is complex to roll back.

Note

For details about setting up LDAP, refer to the *VxFlex OS User Roles and LDAP Usage Technical Notes*.

Syntax

```
scli --set_user_authentication_method (--ldap_authentication | --
native_authentication | --native_and_ldap_authentication)
  [--i_am_sure]
   --mdm_port 6611
```

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 --mdm_port 6611
```

CHAPTER 13

Volume Commands

This section contains commands for managing volumes.

- add_volume 166
- map_volume_to_sdc 167
- modify_volume_capacity 168
- query_all_volumes 169
- query_volume 169
- query_volume_tree 170
- remove_volume 170
- rename_volume 171
- set_volume_rmcache_usage 172
- snapshot_volume 173
- unmap_volume_from_sdc 174

add_volume

Add a volume to the VxFlex OS 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>]
  [--thin_provisioned | --thick_provisioned]
  [--use_rmcache | --dont_use_rmcache]
  --mdm_port 6611
```

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

`--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: `--dont_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 --
mdm_port 6611
```

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

VxFlex OS 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 VxFlex OS 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 VxFlex OS 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]
   --mdm_port 6611
```

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 VxFlex OS volumes with physical disks" in the *VxFlex OS User Guide*.

Example

```
scli --mdm_ip 192.168.1.200 --map_volume_to_sdc --volume_name vol_1
--sdc_ip 192.168.1.3 --mdm_port 6611
```

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

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>)]
   --mdm_port 6611
```

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 --mdm_port 6611
```

query_volume

Retrieve information about the specified volume.

Syntax

```
scli --query_volume (--volume_id <ID> | --volume_name <NAME>)
   --mdm_port 6611
```

Parameters

`--volume_id <ID>`

Volume ID

`--volume_name <NAME>`

Volume name

Example

```
scli --query_volume --volume_name vol_18
```

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 <NAME>)
   --mdm_port 6611
```

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 --mdm_port 6611
```

remove_volume

Remove a VxFlex OS 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 VxFlex OS 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]
   --mdm_port 6611
```

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.

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 --
mdm_port 6611
```

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>
   --mdm_port 6611
```

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 --mdm_port 6611
```

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]
   --mdm_port 6611
```

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
--mdm_port 6611
```

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>]
   --mdm_port 6611
```

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 --mdm_port 6611
```

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

VxFlex OS 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 VxFlex OS 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]
   --mdm_port 6611
```

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 --mdm_port 6611
```

Example (unmap volume from all SDCs)

```
scli --mdm_ip 192.168.1.200 --unmap_volume_from_sdc
--volume_name vol_1 --all_sdcs --mdm_port 6611
```

CHAPTER 14

VxFlex Ready Node AMS CLI

This section contains CLI information and commands specific to the VxFlex Ready Node AMS.

- AMS CLI 178
- AMS CLI commands 179

AMS CLI

The AMS CLI allows you to query and perform actions on the system's hardware components.

The AMS CLI application is installed as a JAR file, `EMC-ScaleIO-ams-cli-<version>.jar`, that is saved by default in the AMS installation directory in the following location:

Operating System	Path
Linux	`/opt/emc/scaleio/ams/webapps/ROOT/resources/scaleio_repository`
Windows	`\Program Files\EMC\ScaleIO\AMS\webapps\ROOT\resources\scaleio_repository`

Syntax

The AMS CLI uses the following syntax:

```
$ java -jar EMC-ScaleIO-ams-cli-<version>.jar [--host <hostname>] --
username <ams_username> --password <ams_password> command (options)
<arguments>
```

Parameters

`--host <hostname>`

Hostname of the remote VxFlex Ready Node host to connect to. If the host is not provided, the CLI tries to connect to the local host.

`--username <ams_username>`

User name used to log in to the AMS

`--password <ams_password>`

Password used to log in to the AMS

Windows example

```
c:\Program Files\EMC\ScaleIO\AMS\webapps\ROOT\resources
\scaleio_repository> java -jar EMC-ScaleIO-ams-cli-<version>.jar --
username admin --password Scaleio123 --query_all_alert
```

Linux example

```
/opt/emc/scaleio/ams/webapps/ROOT/resources/scaleio_repository>
java -jar EMC-ScaleIO-ams-cli-<version>.jar --username admin --
password Scaleio123 --query_all_alert
```

AMS CLI Help

AMS CLI help allows you to view CLI usage and command options.

Syntax

```
--help --host <HOST>
```

Parameters

--host <hostname>

Hostname of the remote VxFlex Ready Node host to connect to. If the host is not provided, the CLI tries to connect to the local host.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --help
```

AMS CLI commands

abort_replace_nodes_certificates

Abort the process of replacing certificates for all of the nodes.

Syntax

```
--abort_replace_nodes_certificates <process_id>
```

Parameters

<process_id>

ID of the process

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
abort_replace_nodes_certificates <process_id>
```

add_sds_device

Add a media device to a Storage Pool as an SDS device.

Syntax

```
--add_sds_device <disk_id> <storage_pool_id>
```

Parameters

<disk_id>

<storage_pool_id>

ID of the Storage Pool to which you are adding the device

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
add_sds_device <disk-id> <storage-pool-id>
```

add_standby_manager

Add a node as a standby manager to a VxFlex Ready Node cluster, as either an MDM or a Tie-Breaker.

Syntax

```
--add_standby_manager --node_id <NODE_ID> --role {mdm | tb}
  [--name <NAME>]
  [--force_clean]
```

Parameters

`--node_id <NODE_ID>`

ID of the VxFlex Ready Node node being added to the cluster

`--role {mdm | tb}`

Role of the node being added to the cluster: MDM or Tie-Breaker

`--name <NAME>`

Name to assign the node

`--force_clean`

Remove previous cluster configurations from the node.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123
add_standby_manager --node_id <NODE_ID> --role mdm
```

cache_storage_pool

Start or stop the caching of a Storage Pool.

Syntax

```
--cache_storage_pool <storage_pool_id> (startCaching | stopCaching)
(dascache)
```

Note

Use the `scli` utility if you are caching with RFCache

Parameters

<storage_pool_id>

ID of the Storage Pool

startCaching

Start caching.

stopCaching

Stop caching.

dascache

Caching mode: DAS Cache. Use this parameter only with the `startCaching` parameter.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
cache_storage_pool <storage_pool_id> startCaching dascache
```

clear_physical_drive_errors

Clear errors from a physical drive in unconfigured bad status.

Syntax

```
--clear_physical_drive_errors <disk_id>
```

Parameters

<disk_id>

ID of the physical drive from which you are clearing errors

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
clear_physical_drive_errors <disk_id>
```

decreaseDataNicsToTwo

Change the number of configured NICs used by the SDS from 4 to 2.

Syntax

```
--decreaseDataNicsToTwo --force
```

Parameters

--force

Force the command, even if the NICs are in use.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
decreaseDataNicsToTwo --force
```

download_logs_to_ams

Transfer the AMS logs from the nodes to the AMS.

Syntax

```
--download_logs_to_ams
```

Example

```
java -jar EMC-ScaleIO-ams-cli-2.5-0.0.jar --username admin --
password Scaleio123 --download_logs_to_ams
```

download_logs_to_client

Download the AMS log ZIP file to a client server.

Syntax

```
--download_logs_to_client <file_path_on_client>
```

Example

```
java -jar EMC-ScaleIO-ams-cli-2.5-0.0.jar --username admin --
password Scaleio123 --download_logs_to_client c:\newfolder
```

export_trusted_ssh_keys

Export all of the nodes' SSH keys to a file to be used by the recovery process.

Syntax

```
--export_trusted_ssh_keys <filename>
```

Parameters

<filename>

Name of the file to which to export the SSH keys

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
export_trusted_ssh_keys <filename>
```

generate_certificate_request

Generate a certificate request to be signed by an external Certificate Authority (CA). The default key size is 2048 bits.

Syntax

```
--generate_certificate_request --key_size [2048 | 4096] --filename
<FILENAME>
```

Parameters

--key_size {2048 | 4096}

Key size of the certificate

--filename *<FILENAME>*

Name of the certificate file

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
generate_certificate_request --key_size 2048
--filename cert-file
```

get_log_collection_status

Query the status of the current AMS log collection process.

Syntax

```
--get_log_collection_status
```

Example output

```
{
  "logCollectionProcessBatchId" :
"ASYNC_PROCESS_LOG_COLLECTION-1510238649905-226175144",
  "logProcessPhase" : "PROCESS_PHASE_COLLECT",
  "logCollectionRequest" : {
    "copyRepositories" : false,
    "collectExceptionOnly" : false,
    "liteVersion" : false,
    "copyBinaries" : false,
    "collectSoftwareLogs" : true,
    "collectBmcLogs" : true,
    "collectLogsFromAllNodes" : null,
    "nodesToCollectLogsFromList" : [ ".G5K3KF2.CN747516740327.",
".G5L1KF2.CN747516740332.", ".GCL1KF2.CN7792167B00NR.",
".GCK6KF2.CN7792167B00QL." ],
    "nodesToCollectLogsFromCount" : 4
  },
  "collectedLogSizePerNodeList" : [ {
    "nodeId" : ".G5K3KF2.CN747516740327.",
    "sizeInKb" : 113
  }, {
    "nodeId" : ".G5L1KF2.CN747516740332.",
```

```
    "sizeInKb" : 112
  }, {
    "nodeId" : ".GCL1KF2.CN7792167B00NR.",
    "sizeInKb" : 116
  } ],
  "collectedLogSizePerNodeCount" : 3
```

increaseDataNicsToFour

Change the number of configured NICs used by the SDS from 2 to 4.

Syntax

```
--increaseDataNicsToFour --force
```

Parameters

`--force`

Force the command, even if the NICs are in use.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
increaseDataNicsToFour --force
```

query_all_<option>

Display information about all instances of a specified option type.

Syntax

```
--query_all_<option>
```

Options

`alert`

Display information for all alerts.

`battery`

Display information for all batteries.

`bmc`

Display information for all baseboard management controllers.

`boot_drive`

Display information for all boot drives.

Note

This option is applicable to 13G nodes with SATADOM only. For 14G nodes with a BOSS controller, use the following options: `physical_drive` or `storage_contoller`.

---

chassis
Display information for all node chassis.

cpu_socket
Display information for all CPU sockets.

cpu_socket_cache
Display information for all CPU socket caches.

fan
Display information for fan units.

nic
Display information for all Network Interface Cards.

nic_port
Display information for all NIC ports.

node
Display information for all nodes.

nodes_credentials
Display all users being used to manage the system's nodes.

physical_drive
Display information for the physical drives.

psu
Display information for all power supply units.

ram
Display information for all RAM.

storage_controller
Display information for all storage controllers.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --query_all_node
```

Sample return message

```
[ {
  "serialNumber" : "WKJ44300120",
  "emptyMemorySlotsList" : [ "DIMM_A1", "DIMM_B1", "DIMM_C0",
"DIMM_C1", "DIMM_D0", "DIMM_D1", "DIMM_E0", "DIMM_E1", "DIMM_F0",
"DIMM_F1", "DIMM_G1", "DIMM_H1" ],
  "emptyMemorySlotsCount" : 0,
  "chassisId" : "QTFCKJ44500026",
  "uuid" : "WKJ44300120",
  "productName" : "S2S-MB",
  "biosVersion" : "S2S_3A14",
  "id" : "WKJ44300120",
  "transientProperties" : {
    "PciInlet1TemperatureInCelsius" : null,
    "P3v3AuxSensorVoltageInVolt" : null,
```

```
    "P3v3SensorVoltageInVolt" : null,
    "P1v05SensorVoltageInVolt" : null,
    "P5vSensorVoltageInVolt" : null,
    "PciAreaTemperatureInCelsius" : null,
    "P1v8AuxSensorVoltageInVolt" : null,
    "PchTemperatureInCelsius" : null,
    "AirflowInCFM" : null,
    "P3vBatSensorVoltageInVolt" : null,
    "PciInlet2TemperatureInCelsius" : null,
    "P5vAuxSensorVoltageInVolt" : null,
    "AmbientFpTemperatureInCelsius" : null,
    "OutletTemperatureInCelsius" : null,
    "P12vSensorVoltageInVolt" : null
  },
  "links" : [ {
    "rel" : "self",
    "href" : "/api/hardware/instances/Node::WKJ44300120"
  }, {
    "rel" : "/api/hardware/Node/relationship/Statistics",
    "href" : "/api/hardware/instances/Node::WKJ44300120/relationships/
Statistics"
  }, {
    "rel" : "/api/hardware/Node/relationship/BootDrive",
    "href" : "/api/hardware/instances/Node::WKJ44300120/relationships/
BootDrive"
  }, {
    "rel" : "/api/hardware/Node/relationship/Bmc",
    "href" : "/api/hardware/instances/Node::WKJ44300120/relationships/
Bmc"
  }, {
    "rel" : "/api/hardware/Node/relationship/CpuSocket",
    "href" : "/api/hardware/instances/Node::WKJ44300120/relationships/
CpuSocket"
  }, {
    "rel" : "/api/hardware/Node/relationship/Nic",
    "href" : "/api/hardware/instances/Node::WKJ44300120/relationships/
Nic"
  }, {
    "rel" : "/api/hardware/Node/relationship/StorageController",
    "href" : "/api/hardware/instances/Node::WKJ44300120/relationships/
StorageController"
  }, {
    "rel" : "/api/hardware/Node/relationship/Ram",
    "href" : "/api/hardware/instances/Node::WKJ44300120/relationships/
Ram"
  }, {
    "rel" : "/api/hardware/parent/relationship/chassisId",
    "href" : "/api/hardware/instances/Chassis::QTFCKJ44500026"
  } ]
}, {
  "serialNumber" : "WKJ44300333",
  "emptyMemorySlotsList" : [ "DIMM_A1", "DIMM_B1", "DIMM_C0",
"DIMM_C1", "DIMM_D0", "DIMM_D1", "DIMM_E0", "DIMM_E1", "DIMM_F0",
"DIMM_F1", "DIMM_G1", "DIMM_H1" ],
  "emptyMemorySlotsCount" : 0,
  "chassisId" : "QTFCKJ44500026",
  "uuid" : "WKJ44300333",
  "productName" : "S2S-MB",
  "biosVersion" : "S2S_3A14",
  "id" : "WKJ44300333",
  "transientProperties" : {
    "PciInlet1TemperatureInCelsius" : null,
    "P3v3AuxSensorVoltageInVolt" : null,
    "P3v3SensorVoltageInVolt" : null,
    "P1v05SensorVoltageInVolt" : null,
    "P5vSensorVoltageInVolt" : null,
    "PciAreaTemperatureInCelsius" : null,
    "P1v8AuxSensorVoltageInVolt" : null,
```

```
    "PchTemperatureInCelsius" : null,
    "AirflowInCFM" : null,
    "P3vBatSensorVoltageInVolt" : null,
    "PciInlet2TemperatureInCelsius" : null,
    "P5vAuxSensorVoltageInVolt" : null,
    "AmbientFpTemperatureInCelsius" : null,
    "OutletTemperatureInCelsius" : null,
    "P12vSensorVoltageInVolt" : null
  },
  "links" : [ {
    "rel" : "self",
    "href" : "/api/hardware/instances/Node::WKJ44300333"
  }, {
    "rel" : "/api/hardware/Node/relationship/Statistics",
    "href" : "/api/hardware/instances/Node::WKJ44300333/relationships/
Statistics"
  }, {
    "rel" : "/api/hardware/Node/relationship/BootDrive",
    "href" : "/api/hardware/instances/Node::WKJ44300333/relationships/
BootDrive"
  }, {
    "rel" : "/api/hardware/Node/relationship/Bmc",
    "href" : "/api/hardware/instances/Node::WKJ44300333/relationships/
Bmc"
  }, {
    "rel" : "/api/hardware/Node/relationship/CpuSocket",
    "href" : "/api/hardware/instances/Node::WKJ44300333/relationships/
CpuSocket"
  }, {
    "rel" : "/api/hardware/Node/relationship/Nic",
    "href" : "/api/hardware/instances/Node::WKJ44300333/relationships/
Nic"
  }, {
    "rel" : "/api/hardware/Node/relationship/StorageController",
    "href" : "/api/hardware/instances/Node::WKJ44300333/relationships/
StorageController"
  }, {
    "rel" : "/api/hardware/Node/relationship/Ram",
    "href" : "/api/hardware/instances/Node::WKJ44300333/relationships/
Ram"
  }, {
    "rel" : "/api/hardware/parent/relationship/chassisId",
    "href" : "/api/hardware/instances/Chassis::QTFCKJ44500026"
  } ]
}, {
  "serialNumber" : "WKJ44300048",
  "emptyMemorySlotsList" : [ "DIMM_A1", "DIMM_B1", "DIMM_C0",
"DIMM_C1", "DIMM_D0", "DIMM_D1", "DIMM_E0", "DIMM_E1", "DIMM_F0",
"DIMM_F1", "DIMM_G1", "DIMM_H1" ],
  "emptyMemorySlotsCount" : 0,
  "chassisId" : "QTFCKJ44500026",
  "uuid" : "WKJ44300048",
  "productName" : "S2S-MB",
  "biosVersion" : "S2S_3A14",
  "id" : "WKJ44300048",
  "transientProperties" : {
    "PciInlet1TemperatureInCelsius" : null,
    "P3v3AuxSensorVoltageInVolt" : null,
    "P3v3SensorVoltageInVolt" : null,
    "P1v05SensorVoltageInVolt" : null,
    "P5vSensorVoltageInVolt" : null,
    "PciAreaTemperatureInCelsius" : null,
    "P1v8AuxSensorVoltageInVolt" : null,
    "PchTemperatureInCelsius" : null,
    "AirflowInCFM" : null,
    "P3vBatSensorVoltageInVolt" : null,
    "PciInlet2TemperatureInCelsius" : null,
    "P5vAuxSensorVoltageInVolt" : null,
```

```
    "AmbientFpTemperatureInCelsius" : null,
    "OutletTemperatureInCelsius" : null,
    "P12vSensorVoltageInVolt" : null
  },
  "links" : [ {
    "rel" : "self",
    "href" : "/api/hardware/instances/Node::WKJ44300048"
  }, {
    "rel" : "/api/hardware/Node/relationship/Statistics",
    "href" : "/api/hardware/instances/Node::WKJ44300048/relationships/
Statistics"
  }, {
    "rel" : "/api/hardware/Node/relationship/BootDrive",
    "href" : "/api/hardware/instances/Node::WKJ44300048/relationships/
BootDrive"
  }, {
    "rel" : "/api/hardware/Node/relationship/Bmc",
    "href" : "/api/hardware/instances/Node::WKJ44300048/relationships/
Bmc"
  }, {
    "rel" : "/api/hardware/Node/relationship/CpuSocket",
    "href" : "/api/hardware/instances/Node::WKJ44300048/relationships/
CpuSocket"
  }, {
    "rel" : "/api/hardware/Node/relationship/Nic",
    "href" : "/api/hardware/instances/Node::WKJ44300048/relationships/
Nic"
  }, {
    "rel" : "/api/hardware/Node/relationship/StorageController",
    "href" : "/api/hardware/instances/Node::WKJ44300048/relationships/
StorageController"
  }, {
    "rel" : "/api/hardware/Node/relationship/Ram",
    "href" : "/api/hardware/instances/Node::WKJ44300048/relationships/
Ram"
  }, {
    "rel" : "/api/hardware/parent/relationship/chassisId",
    "href" : "/api/hardware/instances/Chassis::QTFCKJ44500026"
  } ]
} ]
```


--query_<option>

Display information for a specific instance of the specified option type.

Syntax

```
--query_<option> <instance ID>
```

Parameters

<option>

One of:

alert

Display information for an alert.

battery

Display information for a battery.

bmc

Display information for a baseboard management controller.

boot_drive
Display information for a boot drive.

Note

This option is applicable to 13G nodes with SATADOM only. For 14G nodes with a BOSS controller, use the following options: `physical_drive` or `storage_contoller`.

chassis
Display information for a node's chassis

cpu_socket
Display information for a CPU socket.

cpu_socket_cache
Display information for a Central Control Unit's socket cache

fan
Display information for a fan unit.

nic
Display information for a Network Interface Card.

nic_port
Display information for a NIC's port.

node
Display information for a node

nodes_credentials
Display the users being used to manage the nodes.

physical_drive
Display information for a physical drive

psu
Display information for a power supply unit.

ram
Display information regarding RAM.

storage_controller
Display information for a storage controller.

<instance ID>
Instance ID of the specific entity that you want to query.

Note

To find the instance ID of a specific entity, use the `--query_all_<option>` command.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --query_chassis
QTFCKJ44500026
```

Sample return message

```
{
  "id" : "QTFCKJ44500026",
  "model" : "Rack-Mount Chassis",
  "uuid" : null,
  "transientProperties" : { },
  "links" : [ {
    "rel" : "self",
    "href" : "/api/hardware/instances/Chassis::QTFCKJ44500026"
  }, {
    "rel" : "/api/hardware/Chassis/relationship/Fan",
    "href" : "/api/hardware/instances/Chassis::QTFCKJ44500026/
relationships/Fan"
  }, {
    "rel" : "/api/hardware/Chassis/relationship/Psu",
    "href" : "/api/hardware/instances/Chassis::QTFCKJ44500026/
relationships/Psu"
  }, {
    "rel" : "/api/hardware/Chassis/relationship/Node",
    "href" : "/api/hardware/instances/Chassis::QTFCKJ44500026/
relationships/Node"
  } ]
}
```

recover_system

Recover an AMS server and all of its nodes, including nodes that are disconnected. vCenter and ESRS information are also recovered.

Syntax

```
--recover_system [--ssh_keys_file <FILE_NAME>] [--
custom_node_credentials <FILE_NAME>]
```

Parameters

`--ssh_keys_file <FILE_NAME>`

Filepath of the SSH keys file

`--custom_node_credentials <FILE_NAME>`

File path of the custom node credentials file

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
recover_system --ssh_keys_file C:\system\keys --
custom_node_credentials C:\system\node\credentials
```

remove_standby_manager

Remove a standby MDM.

Syntax

```
--remove_standby_manager --node_id <NODE_ID>
```

Parameters

`--node_id <NODE_ID>`

ID of the VxFlex Ready Node node being removed from the MDM cluster

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
remove_standby_manager --node_id <NODE_ID>
```

remove_virtual_disk

Remove a virtual disk, in case it exists for a non-used device.

Syntax

```
--remove_virtual_disk <disk-id>
```

Parameters

`<disk-id>`

Disk ID

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
remove_virtual_disk ABCDFG1234567
```

replace_ams_certificate

Replace the AMS certificate with an externally signed certificate.

Note

To create the certificate request, use the `--generate_certificate_request` command.

Syntax

```
--replace_ams_certificate --filename <FILENAME>
```

Parameters

`--filename <FILENAME>`

Name of the certificate file to replace.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
replace_ams_certificate
--filename <filename>
```

replace_nodes_certificates

Replace the certificates for all nodes that require it, with a certificate signed by the AMS.

Syntax

```
--replace_nodes_certificates
```

Parameters

None.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
replace_nodes_certificates
```

replace_svm_deploy_ova

Deploy the OVA file during the SVM replacement process.

Syntax

```
--replace_svm_deploy_ova
```

Parameters

None.

Example

```
java –jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
replace_svm_deploy_ova
```

replace_svm_deploy_ova_status

Check the status of the OVA file deployment during the SVM replacement process.

Syntax

```
--replace_svm_deploy_ova_status
```

Parameters
None.

Example

```
$ java -jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
replace_svm_deploy_ova_status
```

replace_svm_start

Start the SVM replacement process.

Syntax

```
--replace_svm_start
```

Parameters
None.

Example

```
java -jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
replace_svm_start
```

replace_svm_task_status

Check the status of the SVM replacement process.

Syntax

```
--replace_svm_task_status
```

Parameters
None.

Example

```
java -jar EMC-ScaleIO-ams-cli-2.6-<build>-X.<build>.jar --
replace_svm_task_status
```

set_ams_secure_mode

Enable or disable secure mode for the AMS.

Syntax

```
--set_ams_secure_mode (enable_secure_mode | disable_secure_mode)
```

Parameters

`enable_secure_mode`
Enable secure mode for the AMS.

disable_secure_mode

Disable secure mode for the AMS.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
set_ams_secure_mode enable_secure_mode
```

set_emergency_password

Set the emergency password that is used to log in with the admin user when there is no connection to the MDM.

Syntax

```
--set_emergency_password <old_password> <new_password>
```

Parameters

<old_password>

Password assigned to the admin user

<new_password>

Emergency password to use with the admin user

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
set_emergency_password <old_password> <new_password>
```

set_mdm_monitoring_user

Set the MDM user that the AMS uses to sample the MDM.

Syntax

```
--set_mdm_monitoring_user <mdm_monitoring_username>
<mdm_monitoring_password>
```

Parameters

<mdm_monitoring_username>

User name for the MDM monitor

<mdm_monitoring_password>

Password for the MDM monitor

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
```

```
set_mdm_monitoring_user <mdm_monitoring_username>
<mdm_monitoring_password>
```

set_node_sampling_credentials

Set the various user credentials that the AMS uses to manage the VxFlex OS nodes.

Syntax

```
--set_node_sampling_credentials <svm_username> <svm_password>
<host_username> <host_password> <bmc_username> <bmc_password>
```

```
--set_node_sampling_credentials
  [--svm_username <USERNAME> --svm_password <PASSWORD>]
  [--host_username <USERNAME> --host_password <PASSWORD>]
  [--bmc_username <USERNAME> --bmc_password <PASSWORD>]
```

Parameters

--svm_username *<USERNAME>*

SVM username

--svm_password*<PASSWORD>*

SVM password

--host_username *<USERNAME>*

Host username

--host_password*<PASSWORD>*

Host password

--bmc_username *<USERNAME>*

BMC username

--bmc_password*<PASSWORD>*

BMC password

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
set_node_sampling_credentials --svm_username <USERNAME>
```

set_recovery_password

Set the recovery password that is used when recovering an AMS server.

Syntax

```
--set_recovery_password <old_password> <new_password>
```

Parameters

<old_password>

Password usually used to log in to the AMS server

<new_password>

Password to use when recovering the server

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
set_recovery_password <old_password> <new_password>
```

start_log_collection

Start the AMS log collection process.

Syntax

```
--start_log_collection (--node_ids <node-ids>|allNodes)
  [copyRepositories]
  [collectExceptionOnly]
  [liteVersion]
  [copyBinaries]
  [collectScaleIOLogs]
  [collectBmcLogs]
```

Parameters

`--node_ids <node-ids>`

Collect logs from only the specified nodes. Enter nodes in a comma-separated list (example: GCL1KF2,GCK6KF2).

`allNodes`

Collect logs from all nodes.

`[copyRepositories]`

Collect repository files.

`[collectExceptionOnly]`

Collect exception files only.

`[liteVersion]`

Copy only `trc.0` and `exp.0` from the logs directory and repository files.

`[copyBinaries]`

Collect MDM, SDS, LIA binaries, and core dumps.

`[collectScaleIOLogs]`

MDM, SDS, and server logs

`[collectBmcLogs]`

iDRAC logs

To collect AMS logs only, run the command without additional parameters.

Example

```
$ java -jar EMC-ScaleIO-ams-cli-2.5-0.111.jar --username admin --
password Scaleio123 --start_log_collection allNodes
collectScaleIOLogs
```

take_ownership

Perform a "take ownership" procedure to allow the AMS to take over management of nodes in a VxFlex Ready Node software-only system. Before using this command, see the VxFlex Ready Node Deployment Guide for prerequisites and a detailed work flow.

Syntax

```
--take_ownership --username <AMS USERNAME> --password <AMS
PASSWORD> --mdm_username <MDM USERNAME> --mdm_password <PASSWORD> --
monitor_username <LDAP MONITOR USERNAME>  --monitor_password <LDAP
MONITOR PASSWORD>
  [--custom_node_credentials_file <FILE PATH>]
```

Parameters

--username *<AMS USERNAME>*

AMS username

--password *<AMS PASSWORD>*

AMS password

--mdm_username *<USERNAME>*

MDM username

--mdm_password *<PASSWORD>*

MDM password

--monitor_username *<LDAP MONITOR USERNAME>*

LDAP Monitor username. This field must not be blank. If there is no monitor username, type any string here.

--monitor_password *<LDAP MONITOR PASSWORD>*

LDAP Monitor password. This field must not be blank. If there is no monitor password, type any string here.

--custom_node_credentials_file *<FILE PATH>*

Use credentials supplied in a CSV file, instead of the credentials used during deployment.

Example

```
$ java -jar EMC-ScaleIO-ams-cli-2.5-0.214.jar --username admin --
password Scaleio123 --take_ownership --mdm_ips 10.234.210.235 --
mdm_username admin --mdm_password Scaleio123 --monitor_username
username --monitor_password password
```

turn_disk_led

Turn a specific disk's identification LED on or off. Use this command to visually identify a specific disk in a node.

Syntax

```
--turn_disk_led <disk ID> (on | off)
```

Parameters

<disk ID>

ID of the disk that you want to identify

on

Turn the LED on.

off

Turn the LED off.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --turn_disk_led
<disk ID> on
```

turn_node_led

Turn a specific node's identification LED on or off. Use this command to visually identify a specific node in a rack.

Syntax

```
--turn_node_led <node ID> (on | off)
```

Parameters

<node ID>

ID of the disk node that you want to identify

on

Turn the LED on.

off

Turn the LED off.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --turn_node_led
<node ID> on
```

upgrade_start

Start an AMS upgrade.

Syntax

```
--upgrade_start
```

Parameters

`--pre_approve_bare_metal_reboot <TRUE/FALSE>`

Allow or prevent a reboot of Linux nodes on which the SDC component is installed. Values:True or False

`--install_all_packages`

By default, the host security patches (Spectre/Meltdown) are installed and enabled. To disable them, add the --install_all_packages flag to the command.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --upgrade_start
--pre_approve_bare_metal_reboot true
```

upgrade_task_status

Display the status of the AMS upgrade process.

Syntax

```
--upgrade_task_status
```

Parameters

None.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --
upgrade_task_status
```

upgrade_upload_tar

Upload the `TAR` file used for the AMS upgrade and replace the SVM processes.

Syntax

```
upgrade_upload_tar <TAR_FILEPATH>
```

Parameters

`<TAR_FILEPATH>`

The filepath of the TAR file to be used for the upgrade.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-2.5-0.214.jar --host
10.103.8.162 --username admin --password Scaleio123 --
upgrade_upload_tar <TAR_FILEPATH>
```

use_as_cache

Start or stop using a SSD device for caching.

Syntax

```
--use_as_cache <disk_id> (startUsingAsCache | stopUsingAsCache) (
rfcache | dascache)
```

Parameters

<disk_id>

ID of the device used for caching

`startUsingAsCache`

Start caching.

`stopUsingAsCache`

Stop caching.

`rfcache`

Caching mode: RFcache. Use this parameter only with the `startUsingAsCache` parameter.

`dascache`

Caching mode: DAS Cache. Use this parameter only with the `startUsingAsCache` parameter.

Example

```
$ java -jar target/EMC-ScaleIO-ams-cli-<version>.jar --host
10.103.8.162 --username admin --password Scaleio123 --use_as_cache
<disk-id> startUsingAsCache dascache
```

CHAPTER 15

Return messages

This section describes an overview of the messages that can be returned by the VxFlex OS CLI.

- Return messages overview 202
- Message list 202

Return messages overview

This section describes the contents and the types of return messages in the VxFlex OS 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 VxFlex Ready Node 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	`remove_sds_device`, `abort_remove_sds_device`
Description	In some situations (usually following a reboot), the operating system changes the device name. The SDS detects this change. `Remove_sds_device` is a time consuming operation. To ensure that you have chosen the correct device, VxFlex OS alerts you to the name change.
Action	Identify the device in the output of `query_sds` 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 `query_all` 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	`add_sds, add_sds_device`
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	`add_sds, add_sds_device`

Parameter	Description
Description	The device size is smaller or larger than the allowed size. For a full description of product limits, see the *VxFlex OS User Guide*.
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	`add_sds, add_sds_device`
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	`add_sds`
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	`add_sds`

Parameter	Description
Description	SDS was previously configured by this MDM. This usually indicates that the SDS was previously removed using `remove_sds`, 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 `--force_clean` 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	`add_sds`
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	`add_sds`
Description	SDS was previously configured by another MDM
Action	Check your command parameters to validate the SDS IP address and port. Check for other VxFlex OS installations of MDMs. If the SDS is not found in any MDM configuration, this might indicate that it was not cleaned up

Parameter	Description
	properly when it was removed. To add the SDS, use the `force_clean` flag. **Note** This command erases the existing SDS configuration and data.

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 `query_all_sds` 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 `query_all_volumes` 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 `query_all_sdc` 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	`map_volume_to_sdc` (when mapping to a single SDC)
Description	The specified volume is already mapped to the specified SDC
Action	Check the command parameters, and use `query_all_volumes` 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	`map_volume_to_sdc` (when mapping to all SDCs)
Description	The specified volume is already mapped to all SDCs
Action	Check the command parameters, and use `query_all_volumes` 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	`unmap_volume_from_sdc`, `query_sdc_volume_limits`, `set_sdc_volume_limits`
Description	The specified volume is not mapped to the specified SDC

Parameter	Description
Action	Check the command parameters, and use `query_all_sdc` 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	`map_volume_to_sdc`, `unmap_volume_from_sdc`, `set_sdc_volume_limits`
Description	The volume is mapped to all SDCs
Action	Check the command parameters, and use `query_all_volumes` to validate the current mapping

Too many mappings

Parameter	Description
Name	TOO_MANY_MAPPINGS
Message	There are too many mappings
Commands	`map_volume_to_sdc`
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 `query_all_volumes` 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 `query_all_sds` 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 `query_all_sdc` 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	`add_sds`
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	`add_volume`
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	`add_volume`
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 in already in use. Please use a different name.
Commands	`add_sds, rename_sds`
Description	The specified SDS name is already in use by another SDS

Parameter	Description
Action	Use `query_all_sds` 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	`add_volume, rename_volume`
Description	The specified volume name is already in use by another volume
Action	Use `query_all_volumes` 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	`add_sds`
Description	A device appears more than once in the `add_sds` 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	`map_volume_to_sdc, unmap_volume_from_sdc,`

Parameter	Description
	`set_sdc_volume_limits, query_sdc_volume_limits`
Description	The specified SDC IP address is not unique. It is associated with more than one SDC.
Action	Use `query_all_sdc` 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	`abort_remove_sds`
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	`remove_volume, remove_consistency_group`
Description	The volume (for `remove_volume`) or any volume in the group (`remove_consistency_group`) is mapped to an SDC
Action	Unmap before removing the volume or consistency group. Use `query_all_volumes` 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 `--mdm_ip` to the commands

Command only in cluster

Parameter	Description
Name	CMD_ONLY_IN_CLUSTER
Message	Command can only be used in cluster mode
Commands	`switch_mdm_ownership,`
Description	This command can be issued only when in cluster mode
Action	Use `query_cluster` 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 `switch_mdm_ownership` 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	`switch_mdm_ownership`
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	`add_sds, add_sds_device`
Description	Too many devices specified (`add_sds`), 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 `query_sds` 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	`set_license`
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	`set_license`
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	`set_license`
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	`query_license, add_sds, add_sds_device, set_data_copy_limit`
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	`set_license`
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	`add_sds, add_sds_device`
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	`set_license`
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	`set_license`
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	`set_license`
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	`modify_volume_capacity`
Description	The specified volume capacity is smaller than the existing volume capacity. Decreasing volume capacity is not supported.
Action	Use `query_all_volumes` to validate your current configuration

SDS device being removed

Parameter	Description
Name	TGT_DEV_BEING_REMOVED
Message	The SDS device is being removed
Commands	`remove_sds, remove_sds_device, activate_sds_device, start_sds_device_test`
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	`remove_sds_device`
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	`abort_remove_sds`
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	`add_sds_device, remove_sds`
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 `query_sds` to determine the correct ID

Too many Protection Domains

Parameter	Description
Name	TOO_MANY_FDs
Message	There are too many Protection Domains
Commands	`add_protection_domain`
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	`add_protection_domain, rename_protection_domain`
Description	The specified Protection Domain name is already in use by another Protection Domain
Action	Use `query_all` 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 `query_all` to validate the existing Protection Domain names.

Protection Domain has SDSs

Parameter	Description
Name	FD_HAS_TGTS
Message	Protection Domain has SDSs
Commands	`remove_protection_domain`
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	`add_volume`
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	`query_sds_network_test_results`
Description	The specified SDS has no network test results
Action	Check the command parameters to make sure that a `start_sds_network_test` was sent to the specified SDS. If this is the correct

Parameter	Description
	SDS, resend the `start_sds_network_test` command.

Network test in progress

Parameter	Description
Name	NET_TEST_IN_PROGRESS
Message	Network test in progress
Commands	`query_sds_network_test_results`
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	`activate_sds_device`
Description	At least one specified device is already active
Action	Use `query_sds` 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	`activate_sds_device`
Description	At least one specified device will automatically be activated when its test is completed

Parameter	Description
Action	Use `query_sds` 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	`activate_sds_device`
Description	At least one specified device test is not yet complete. This device cannot be activated.
Action	Use `query_sds` 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	`start_sds_device_test`
Description	At least one specified device test is in-progress. A new test for this device cannot be started now.
Action	Use `query_sds` 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	`add_volume`
Description	The MDM is attempting to recover a connection with an SDS. You cannot create a volume now.

Parameter	Description
Action	Use `query_all` 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	`add_volume`
Description	System capacity is unbalanced. This can be a temporary or permanent state. • 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 VxFlex OS 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 support.

Volume creation failed

Parameter	Description
Name	VOL_CREATE_FAIL
Message	Could not create the volume
Commands	`add_volume`
Description	The volume creation failed
Action	Use `query_all` 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	`add_storage_pool`
Description	Addition of another Storage Pool will exceed the system limit of allowed Storage Pools in a Protection Domain
Action	Use `query_protection_domain` 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	`add_storage_pool`
Description	A Storage Pool with the specified name already exists in the specified Protection Domain
Action	Use `query_protection_domain` 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 `query_protection_domain` 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	`remove_storage_pool`
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	`rename_storage_pool`
Description	A Storage Pool with the specified new name already exists in the Protection Domain
Action	Use `query_protection_domain` 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 `query_protection_domain` 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	`remove_protection_domain`
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	`remove_sdc`
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	`snapshot_volume`
Description	Taking a snapshot of the specified volume will exceed the allowed system limit of snapshots per volume
Action	Use `query_volume` 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	`snapshot_volume`
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	`remove_volume`
Description	The combination of parameters resulted in an empty set of volumes to delete
Action	Use `query_volume` 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	`add_sds, add_sds_device`
Description	Adding a device to the specified Storage Pool will exceed the allowed system limit of SDS devices per Storage Pool
Action	Use `query_sds` 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	`remove_consistency_group`
Description	No volume found for the specified consistency group

Parameter	Description
Action	Use `query_all_volumes` 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	`add_sds_ip`
Description	Addition of an IP address to the SDS exceeds the allowed system limit of IP addresses per SDS
Action	Use `query_sds` 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	`remove_sds_ip`
Description	An SDS must have at least one IP address. Cannot remove the last remaining IP address.
Action	Use `query_sds` to view the SDS IP addresses.

SDS IP address not found

Parameter	Description
Name	SDS_IP_NOT_FOUND
Message	SDS IP not found
Commands	`remove_sds_ip`

Parameter	Description
Description	The specified SDS IP address was not found
Action	Use `query_sds` to view the SDS IP addresses

Volume size too large

Parameter	Description
Name	VOL_SIZE_TOO_LARGE
Message	The volume size too large
Commands	`add_volume, modify_volume_capacity`
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	`snapshot_volume`
Description	Snapshots are disabled when the free capacity in the Storage Pool is very low. The threshold is defined using the `set_capacity_alerts_threshold` 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	`add_sds, add_sds_ip`
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	`add_sds, add_sds_ip`
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	Uninstall the packages manually:
	Linux:
	1. Find the package name:
	`rpm -qa | grep -i lia`
	The LIA package name is displayed. For example:
	`EMC-ScaleIO-lia-2.50-0.30.el6.x86_64`
	2. Uninstall the package:
	`rpm -e <PACKAGE_NAME>`

LIA command failed

Parameter	Description
Name	LIA_COMMAND_FAILED
Message	The command failed. Please try again.
Description	This is a general error message.
Action	Look for more information about the error in the LIA log: Linux: `/opt/emc/scaleio/lia/logs`

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.
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 `get_info` 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	Edit the LIA's configuration file with LIA token and restart the LIA. The configuration file is found at: • Linux: `/opt/emc/scaleio/lia/cfg/cont.txt` • 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 `prepare_disk` 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	`modify_sds_ip, remove_sds_ip`
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	`set_capacity_alert_threshold`
Description	The legal range for the capacity alert threshold is a percentage value between 0 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	`remove_storage_pool` `remove_protection_domain`
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 `query_all` 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	`add_sds_ip`

Parameter	Description
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	`modify_sds_ip`
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	`query_properties`, `query_system`
Description	The system ID number has been modified, and does not match the ID specified in the command.
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.

Parameter	Description
Commands	`add_sds_device`
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	`add_volume, modify_volume_size`
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	`remove_sdc`
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

Parameter	Description
Message	The percentage value that you provided is invalid. Please use a value between 0—100.
Commands	`set_thick_volume_percentage`
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.
Commands	`set_license`
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	`set_license`
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	`start_sds_network_test`
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.
Commands	`start_sds_network_test`
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	`start_sds_network_test`
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	`start_sds_network_test`
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	`start_sds_network_test`
Description	Your command did not contain a value for time or size.

Parameter	Description
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	`start_sds_network_test`
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	`modify_zero_padding_policy`
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

Parameter	Description
Message	The license contains a mismatch of the capacity values for basic and advanced features. Please contact Customer Support.
Commands	`set_license`
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	`add_volume, modify_volume_capacity`
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
Message	The SDC is mapped to too many volumes. Please remove some mapping.
Commands	`map_volume_to_sdc`
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	`remove_sds, remove_sds_device`
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	`sds_network_limits`
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.
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	`activate_sds_device` with the parameter `activate_all_devices`

Parameter	Description
Description	If a device is in the process of being removed, you cannot use the `activate_all_devices` 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	`activate_sds_device` with the parameter `activate_all_devices`
Description	A device is already active.
Action	Do not use the `activate_all_devices` 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

Commands	`enable_sds_rmcache`
	`disable_sds_rmcache`
	`set_sds_rmcache_size`

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

Parameter	Description
Message	Only a single SDC may be mapped to this volume at a time
Commands	`map_volume_to_sdc`
Description	The volume is already mapped, and the `allow_multi_map` flag was not used in the command
Action	The volume is already mapped. Use the `allow_multi_map` 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	`enable_sds_rmcache`
	`disable_sds_rmcache`
	`set_sds_rmcache_size`
	for the entire Protection Domain

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	`activate_sds_device` with `activate_all_devices` parameter
Description	A device was not added with the `test_only` option, so it cannot be activated with this command.

Parameter	Description
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	`activate_sds_device` with `activate_all_devices` 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.
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	`map_volume_to_sdc` with the `all_sdcs` option

Parameter	Description
Description	If the volume is already mapped to one or more SDCs, you cannot use the `all_sdcs` 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	`add_sds`
Description	If you try to add an SDS that already exists, and is in the process of being removed, this operation will fail. **Note** If an `add_sds` command failed, the system will try to remove it automatically, without user intervention. Therefore, if you issue the same `add_sds` command twice in a row, and the first time failed, this return code may be generated (depending on why adding the SDS failed).
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 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.

Parameter	Description
Commands	`modify_spare_policy`
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	`enable_background_device_scanner`
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
Commands	`enable_background_device_scanner`
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	`add_sds, add_sds_ip`
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	`add_volume, modify_volume_capacity`
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	`add_storage_pool`
Description	Addition of another Storage Pool will exceed the system limit of allowed Storage Pools

Parameter	Description
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	`add_sds, add_sds_device`
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	`add_sds, add_sds_device`

Parameter	Description
Description	The added device is mounted and cannot be used by the system
Action	Unmount the device

INDEX

--query_sdc_to_sds_disconnections 82

A

access
- set_remote_read_only_limit_state 50

admin
- disable_admin 159

alerts
- set_capacity_alerts_threshold 99

AMS
- recover_system 190
- set_ams_secure_mode 193

AMS CLI
- decreaseDataNicsToTwo 181
- help 179
- increaseDataNicsToFour 184
- remove_virtual_disk 191
- start_log_collection 196
- syntax 178
- take_ownership 197
- upgrade_upload_tar 199

authentication
- query_user_authentication_properties 161
- set_component_authentication_properties 150

C

certificates
- abort_replace_nodes_certificates 179
- approve_all_mdm_certificates 112
- generate_certificate 116
- generate_certificate_request (AMS) 183
- generate_mdm_certificate 117
- replace_ams_certificate 191
- replace_nodes_certificates 192

counters
- query_oscillating_failure_counter_parameters 44
- reset_oscillating_failure_counters 45
- set_oscillating_failure_counter_parameters 48

credentials
- set_node_sampling_credentials 195

D

devices
- query_all_device_latency_meters 27
- query_device_latency_meters 27

E

errors
- clear_physical_drive_errors 181

exit_maintenance_mode 114

F

Fault Set
- add_fault_set 38
- clear_fault_set 39
- query_all_fault_sets 39
- query_fault_set 40
- remove_fault_set 40
- rename_fault_set 41

H

help 19

L

LDAP
- add_ldap_service 54
- assign_ldap_groups_to_roles 112
- remove_ldap_group_from_role_assignment 55
- remove_ldap_service 56
- rename_ldap_service 57

LED 32, 198
- *See also* SDS, set_sds_device_led
- turn_disk_led 198
- turn_node_led 198

license
- query_license 44
- set_license 47

login 17, 47, 48
- set_cli_login_banner_preemptive_acceptance 47
- set_login_banner 48

logout 19

M

maintenance mode
- enter_maintenance_mode 113

MDM 110, 112, 117, 119, 121, 130, 144–147, 149, 150, 153, 155, 194
- *See also* users
- add_standby_mdm 110
- approve_all_mdm_certificates 112
- generate_mdm_certificate 117
- generate_mdm_csr_file 117
- modify_cluster_virtual_ips 119
- modify_management_ip 119
- modify_virtual_ip_interfaces 121
- query_cluster 130
- query_remote_read_only_limit_state 144
- refresh_mdm_cluster_capabilities 145
- remove_standby_mdm 145
- rename_mdm 146
- replace_cluster_mdm 147
- replace_mdm_security_files 149
- set_management_client_communication 150
- switch_cluster_mode 153

switch_mdm_ownership 155

N

non-secure mode 16

O

object names 16

P

password
- reset_password 161
- set_emergency_password 194
- set_password 162
- set_recovery_password 195

performance
- query_performance_parameters 131
- set_performance_parameters 151

policy
- modify_spare_policy 120

Protection Domain
- activate 60
- add_protection_domain 60
- inactivate_protection_domain 61
- query_all 122
- query_protection_domain 62
- remove_protection_domain 62
- rename_protection_domain 63

Q

query all entitites (AMS) 184
query entity (AMS) 188
query_all
- output description 125

query_properties 132, 134, 135
- object presents 134
- properties 135

query_remote_syslog 44

R

Read RAM Cache
- set_rmcache_usage 106
- set_rmcache_write_handling_mode 108

rebuild/rebalance
- set_rebalance_mode 100
- set_rebalance_policy 101
- set_rebuild_mode 103
- set_rebuild_policy 104
- set_rebuild_rebalance_parallelism 106

RFcache
- disable_sds_rfcache 66
- enable_sds_rfcache 66
- set_rfcache_parameters 67

roles
- assign_ldap_groups_to_roles 112

S

SCLI
- format 14
- path 14
- syntax 15

SDC
- add_sdc 70
- query_all_approved_sdc 70
- query_all_sdc 71
- query_restricted_sdc_mode 71
- query_sdc 72
- query_sdc_volume_limits 72
- remove_sdc 73
- rename_sdc 74
- restricted mode 70
- set_restricted_sdc_mode 152
- set_sdc_volume_limits 74

SDS 22, 23, 26, 28–34, 78–90, 116, 200
- abort_remove_sds 78
- abort_remove_sds_device 22
- activate_sds_device 22
- add_sds_device 23
- clear_sds_device_error 26
- disable_sds_rmcache 78
- enable_sds_rmcache 79
- generate_certificate 116
- modify_sds_ip_role 80
- modify_sds_port 81
- query_all_sds 81
- query_device_test 28
- query_sds 83
- query_sds_connectivity_status 83
- query_sds_device_info 29
- query_sds_network_test_results 84
- remove_sds 84
- remove_sds_device 30
- rename_device 31
- rename_sds 85
- set_drl_properties 86
- set_sds_device_led 32
- set_sds_network_limits 87
- set_sds_rmcache_size 88
- show_certificate 89
- start_device_test 33
- start_sds_network_test 90
- update_device_original_path 34
- use_as_cache 200

set_approved_sdc_ips 75

SSH
- export_trusted_ssh_keys 182

Storage Pool
- modify_zero_padding_policy 95
- add_sds_device 179
- add_storage_pool 92
- cache_storage_pool 180
- disable_background_device_scanner 93
- enable_background_device_scanner 94
- query_storage_pool 96
- remove_storage_pool 97
- rename_storage_pool 98
- reset_scanner_error_counters 99

SVM
- replace_svm_deploy_ova 192
- replace_svm_deploy_ova_status 192
- replace_svm_start 193

replace_svm_task_status 193
syslog
set_syslog_facility 50
start_remote_syslog 51
stop_remote_syslog 51
system
query_system_limits 144
rename_system 146

T

trusted certificate
add_certificate 110

U

upgrade
abort_upgrade 110
allow_commands_during_upgrade 112
finalize_upgrade 116
query_upgrade 144
start_upgrade 153
upgrade_start (AMS) 199
upgrade_task_status (AMS) 199
users
add_user 158
delete_user 158
modify_user 159
query_user 160
query_users 161
set_mdm_monitoring_user 194
set_user_authentication_method 163

V

V-Tree
query_volume_tree 170
volume
snapshot_volume 173
unmap_volume_from_sdc 174
volumes
add_volume 166
map_volume_to_sdc 167
modify_volume_capacity 168
query_all_volumes 169
query_volume 169
remove_volume 170
rename_volume 171
set_volume_rmcache_usage 172
VxFlex Ready Node
CLI application 178
VxFlex Ready Node cluster
add_standby_manager 180
remove_standby_manager 191

Z

zero padding, See Storage Pool, modify_zero_padding_policy , See Storage Pool, modify_zero_padding_policy