



Red Hat Enterprise Linux Release 9.2 Manual Pages on 'lsmcli.1' command

\$ man lsmcli.1

LSMCLI(1) libStorageMgmt LSMCLI(1)

NAME

lsmcli - libStorageMgmt command line interface

SYNOPSIS

lsmcli command [GLOBAL OPTIONS]...[COMMAND OPTIONS]...

DESCRIPTION

lsmcli is the command line tool for the libStorageMgmt library. This tool allows users to do one off storage related management operations or to script management of their storage.

PREREQUISITES

* libStorageMgmt daemon.

The daemon 'lsmd' is required by lsmcli.

* URI(Uniform Resource Identifier)

URI is used to identify which plugin to use and how the plugin should communicate with the storage array. The valid URI format is:

plugin://<username>@host:<port>?<query_string_parameters>

plugin+ssl://<username>@host:<port>?<query_string_parameters>

Examples, please refer to "LibStorageMgmt User Guide" for more details:

* Simulator:

sim://

simc://

* SMI-S supported arrays (eg. EMC CX/VNX, HDS AMS, IBM SVC/DS, LSI MegaRAID and others):

```
smis://username@host:<port>?namespace=<namespace>
```

```
smis+ssl://username@host:<port>?namespace=<namespace>
```

You can pass URI to lsmcli via one of these methods:

* Using '-u, --uri' argument.

* Using 'LSMCLI_URI' environment variable.

* Add this line into \$HOME/.lsmcli:

```
uri=<URI>
```

* Password

For storage array password authentication you can pass it to lsmcli via one of the following methods:

* '-P, --prompt' argument to prompt for password.

* 'LSMCLI_PASSWORD' environment variable.

GLOBAL OPTIONS

--version Show program's version number and exit

-h, --help Show this help message and exit. Will show help message of specific command if specified.

-u <URI>, --uri <URI>

Uniform Resource Identifier (env LSMCLI_URI)

-P, --prompt Prompt for password (env LSMCLI_PASSWORD)

-H, --human Print sizes in human readable format (e.g., KiB, MiB, GiB, TiB, PiB, EiB)

-t <SEP>, --terse <SEP>

Print output in terse form with "SEP" as a record separator without header unless '--header' defined.

--header Include the header with terse

-e, --enum Display enumerated types as numbers instead of text

-f, --force Bypass confirmation prompt for data loss operations

-w <WAIT>, --wait=<WAIT>

Command timeout value in ms (default = 30s)

-b Run the command asynchronously instead of waiting for completion. The lsmcli command will exit with exit

code(7) and job id will be written to STDOUT when a command is still executing on the storage array. Use 'job-status --id <job id>' to inquire on the progress of the command. Some arrays or plugins might not support asynchronous operations, in those circumstances, -b will be ineffective. Command will wait until finished.

-s, --script Displaying data in script friendly way.

Without this option, data is displayed in this manner (default):

```
ID | Name | Element Type      ...
----- ...
aggr0 | aggr0 | FS,SYSTEM_RESERVED,POOL ...
iscsi | iscsi | FS,POOL           ...
```

With this option, data is displayed in this manner.

```
-----
ID      | aggr0
Name    | aggr0
Element Type | FS,SYSTEM_RESERVED,POOL
...
-----
ID      | iscsi
Name    | iscsi
Element Type | FS,POOL
...
```

Please note:

To reduce the width of output, NOT all properties will be displayed in default column display.

COMMANDS

list

List information on LSM objects

--type <TYPE> Required. Valid values are (case insensitive):

VOLUMES, POOLS, FS, SNAPSHOTS, EXPORTS, NFS_CLIENT_AUTH,
ACCESS_GROUPS, SYSTEMS, DISKS, PLUGINS, TARGET_PORTS,

BATTERIES.

`--fs <FS_ID>` Required for `--type=SNAPSHOTS`, list the snapshots of specific filesystem. Optional for type `EXPORTS`, list the NFS export for specific filesystem. Optional for type `FS`, list specific filesystem.

`--sys <SYS_ID>` Optional. Search resources from system with `SYS_ID`. Only supported when querying these types of resources, `VOLUMES`, `POOLS`, `FS`, `DISKS`, `ACCESS_GROUPS`, `TARGET_PORTS`
BATTERIES.

`--pool <POOL_ID>`
Optional. Search resources from pool with `POOL_ID`. Only supported by these types of resources: `VOLUMES`, `POOLS`, `FS`.

`--vol <VOL_ID>` Search resources from volume with `VOL_ID`. Only supported by these types of resources: `VOLUMES`, `ACCESS_GROUPS`.
To query volume masking status, please use this command:
`lsmcli list --type ACCESS_GROUPS --vol <VOL_ID>`

`--disk <DISK_ID>`
Search resources from disk with `DISK_ID`. Only supported by these types of resources: `DISK`.

`--ag <AG_ID>` Search resources from access group with `AG_ID`. Only supported by these types of resources: `ACCESS_GROUPS`, `VOLUMES`.
To query volume masking status, please use this command:
`lsmcli list --type VOLUMES --ag <AG_ID>`

`--nfs-export <NFS_EXPORT_ID>`
Search resources from NFS export with `NFS_EXPORT_ID`.
Only supported by these types of resources: `EXPORTS`.

`--tgt <TGT_ID>` Search resources from target port with target port ID.
Only supported by these types of resources: `TARGET_PORTS`.

job-status

Retrieve information about a job. Please see user guide on how to use.

--job <JOB_ID>

capabilities

Retrieves array capabilities.

--sys <SYS_ID> Required. ID of the system to query for capabilities.

plugin-info

Retrieves plugin description and version for current URI.

volume-create

Creates a volume (AKA., logical volume, virtual disk, LUN).

--name <NAME> Required. Volume name.

--size <SIZE> Required. Volume size (See SIZE OPTION for allowed for?
mats).

--pool <POOL_ID>

Required. ID of pool.

--provisioning <THINP_TYPE>

Optional. Provisioning type. Valid values are: DEFAULT,
THIN, FULL. DEFAULT means let plugin choose. THIN means
requiring a Thin Provisioning enabled volume. FULL means
requiring a fully allocated volume.

volume-raid-create

Creates a volume on hardware RAID on given disks.

--name <NAME> Required. Volume name. Might be altered or ignored due
to hardware RAID card vendor limitation.

--raid-type <RAID_TYPE>

Required. Could be one of these values: RAID0, RAID1,
RAID5, RAID6, RAID10, RAID50, RAID60. The supported RAID
types of current RAID card could be queried via command
"volume-raid-create-cap".

--disk <DISK_ID>

Required. Repeatable. The disk ID for new RAID group.

--strip-size <STRIP_SIZE>

Optional. The size in bytes of strip on each disks. If
not defined, will let hardware card to use the vendor
default value. The supported stripe size of current RAID

card could be queried via command "volume-raid-create-cap".

volume-raid-create-cap

Query support status of volume-raid-create command for current hardware RAID card.

--sys <SYS_ID> Required. ID of the system to query for capabilities.

volume-ident-led-on

Enable the IDENT LEDs for all physical disks that compose a logical volume.

--vol <VOL_ID> Required. ID of the volume being targeted.

volume-ident-led-off

Disable the IDENT LEDs for all physical disks that compose a logical volume.

--vol <VOL_ID> Required. ID of the volume being targeted.

volume-delete

Delete a volume given its ID

--vol <VOL_ID> Required. The ID of volume to delete.

volume-resize

Re-sizes a volume, requires:

--vol <VOL_ID> Required. The ID of volume to resize.

--size <NEW_SIZE>

Required. The new size of volume.(See SIZE OPTION for allowed formats). Due to boundary alignment concern, array might return a volume with slightly bigger size than requested.

volume-replicate

Creates a new volume and replicates provided volume to it.

--vol <VOL_ID> Required. The ID of volume to replicate.

--name <NAME> Required. The name for new volume to hold replicated data.

--rep-type <REPL_TYPE> (see VOLUME REPLICATION TYPES)

Required. Valid types of replication are:

CLONE, COPY, MIRROR_ASYNC, MIRROR_SYNC.

--pool <POOL_ID>

Optional. The ID of pool where the new volume should be created from. If not specified, plugin or array will choose appropriate pool.

volume-replicate-range

Replicates a portion of a volume to the same volume or to a different volume.

--src-vol <SRC_VOL_ID>

Required. The ID of replication source volume.

--dst-vol <DST_VOL_ID>

Required. The ID of replication destination volume.

--rep-type <REPL_TYPE> (see VOLUME REPLICATION TYPES)

Required. Appropriate types of replication are:

CLONE, COPY.

--src-start <SRC_START_BLK>

Required. Replication source volume start block number.

Must in pair with --count and --dst-start. If you have several non-continuous block ranges, you can define repeatedly define this argument, like '--src-start 0 --dst-start 0 --count 1024 --src-start 2048 --dst-start 2048 --count 2048'

--dst-start <DST_START_BLK>

Required. Replication destination volume start block number. Must in pair with --count and --src-start.

--count <BLK_COUNT>

Required. The block of Must in pair with --src-start and

--src-start

--dst-start.

volume-replicate-range-block-size

Size of each replicated block on a system in bytes.

--sys <SYS_ID> Required. ID of the system to query for replicated block size.

volume-dependants

Returns True if volume has a dependant child, like replication.

--vol <VOL_ID> Required. The ID of volume to query dependency.

volume-dependants-rm

Removes volume dependencies(like replication).

--vol <VOL_ID> Required. The ID of volume to remove dependency.

volume-access-group

Lists the access group(s) that have access to the provided volume.

--vol <VOL_ID> Required. The ID of volume to query access.

volume-mask

Grant access group RW access to specific volume. Like LUN masking
or NFS export.

--vol <VOL_ID> Required. The ID of volume to access.

--ag <AG_ID> Required. The ID of access group to grant.

volume-unmask

Revoke access group RW access to specified volume.

--vol <VOL_ID> Required. The ID of volume to revoke.

--ag <AG_ID> Required. The ID of access group to revoke.

volume-enable

Enable block access of specified volume.

--vol <VOL_ID> Required. The ID of volume to enable access.

volume-disable

Disable block access of specified volume.

--vol <VOL_ID> Required. The ID of volume to disable access.

volume-raid-info

Query RAID information for given volume.

--vol <VOL_ID> Required. The ID of volume to query.

pool-member-info

Query RAID information for given pool.

--pool <POOL_ID>

Required. The ID of pool to query.

access-group-create

Create an access group.

--name <AG_NAME>

Required. The human friendly name for new access group.

--init <INIT_ID>

Required. The first initiator ID of new access group.

WWPN or iSCSI IQN.

--sys <SYS_ID> Required. The ID of system where this access group should reside on.

access-group-add

Adds an initiator to an access group.

--ag <AG_ID> Required. ID of access group.

--init <INIT_ID>

Required. ID of initiator to add. WWPN or iSCSI IQN.

access-group-remove

Removes an initiator from an access group.

--ag <AG_ID> Required. ID of access group.

--init <INIT_ID>

Required. ID of initiator to remove.

access-group-delete

Delete an access group.

--ag <AG_ID> Required. ID of access group to delete.

access-group-volumes

Lists the volumes that the access group has been granted access to.

--ag <AG_ID> Required. The ID of access group to query.

iscsi-chap

Configures iSCSI inbound/outbound CHAP authentication.

--init <INIT_ID>

Required. The ID of iSCSI initiator to configure.

--in-user <IN_USER>

Optional. Inbound CHAP user name.

--in-pass <IN_PASS>

Optional. Inbound CHAP password.

--out-user <OUT_USER>

Optional. Outbound CHAP user name.

--out-pass <OUT_PASS>

Optional. Outbound CHAP password.

fs-create

Creates a filesystem.

--name <NAME> Required. Human friendly name for new filesystem.

--size <SIZE> Required. Volume size(See SIZE OPTION for allowed for?
mats).

--pool <POOL_ID>

Required. ID of pool to hold the new filesystem.

fs-delete

Delete a filesystem.

--fs <FS_ID> Required. ID of the filesystem to delete.

fs-resize

Resizes a filesystem.

--fs <FS_ID> Required. ID of the filesystem to resize.

--size <NEW_SIZE>

Required. New size of filesystem. See SIZE OPTION for
allowed formats.

fs-export

Export a filesystem via NFS.

--fs <FS_ID> Required. ID of the filesystem to export.

--exportpath <EXPORT_PATH>

Optional. NFS server export path. e.g. '/foo/bar'.

--anonuid <ANONY_UID>

Optional. The UID(User ID) to map to anonymous user.

--anongid <ANONY_GID>

Optional. The GID(Group ID) to map to anonymous user.

--auth-type <AUTH_TYPE>

Optional. NFS client authentication type. This is just a
place holder, not supported yet.

--root-host <ROOT_HOST>

Optional. Repeatable. The host/IP has root access. For
two or more hosts/IPs: --root-host hostA --root-host
hostB.

--ro-host <RO_HOST>

Optional. Repeatable. The host/IP has read only access.

For two or more hosts/IPs: '--ro-host hostA --ro-host hostB'.

--rw-host <RW_HOST>

Optional. The host/IP has read/write access. For two or more hosts/IPs: '--rw-host hostA --rw-host hostB'.

fs-unexport

Remove an NFS export.

--export <EXPORT_ID>

Required. ID of the export to unexport.

fs-clone

Creates a file system clone. The 'clone' means point in time read writeable space efficient copy of data, AKA. read-writable snapshot.

--src-fs <SRC_FS_ID>

Required. The ID of the filesystem to clone.

--dst-name <DST_FS_NAME>

Required. The name for newly created destination file system.

--backing-snapshot <BE_SS_ID>

Optional. Make a FS clone using a previously created snapshot.

fs-snap-create

Creates a snapshot of specified filesystem. A snapshot is defined as a read only space efficient point in time copy (PIT) of a filesystem.

The source filesystem remains modifiable.

--name <SNAP_NAME>

Required. The human friendly name of new snapshot.

--fs <FS_ID> Required. The ID of filesystem to create snapshot against.

fs-snap-delete

Deletes a snapshot.

--snap <SNAP_ID>

Required. The ID of snapshot to delete.

--fs <FS_ID> Required. The ID of filesystem.

fs-snap-restore

Restores a FS or specified files to previous snapshot state. This will discard all the changes to filesystem since snapshot if specific files are not specified in restore.

--fs <FS_ID> Required. The ID of filesystem to restore.

--snap <SNAP_ID>

Required. The ID of snapshot to restore.

--file <FILE_PATH>

Optional. Repeatable. With this option defined, will only restore the defined file(s). --file fileA --file pathB.

--fileas <NEW_FILE_PATH>

Optional. Repeatable. With this option defined, the restored file will be saved to specified path and file name, eg. '--file fileA --fileas old_fileA '.

fs-dependants

Returns True if a child dependency (snapshot or clone) exists.

--fs <FS_ID> Required. The ID of filesystem to query.

--file <FILE_PATH>

Optional. Repeatable. Only check for dependencies on specific file(s), eg. '--file fileA --file pathB'.

fs-dependants-rm

Removes filesystem dependencies(snapshot or clone).

--fs <FS_ID> Required. The ID of filesystem to remove dependency.

--file <FILE_PATH>

Optional. Repeatable. Only remove dependencies on specific file(s), eg. '--file fileA --file pathB'.

file-clone

Creates a clone of a file (thin provisioned). Note: --src and --dst need to be paired

eg. '--src fileA --src fileB --dst fileA_clone --dst fileB_clone'.

--fs <FS_ID> Required. The ID of filesystem to clone.

--src <SRC_FILE_PATH>

Required. Repeatable. Source file to clone (relative path).

--dst <DST_FILE_PATH>

Required. Repeatable. Destination file for clone (relative path).

--backing-snapshot <SNAP_ID>

Optional. Use the source file from previously created snapshot.

system-read-cache-pct-update

Change the read cache percentage for a system.

--sys <SYS_ID> Required. ID of the system being targeted.

--read-pct <READ_PCT>

The desired percentage of read cache for the targeted system. Write cache will be automatically changed to the remaining percentage available after updating the read cache (if supported by the system).

local-disk-list

List all disks found on current local operating system. Require permission to open /dev/sdX as read-only, normally root user or disk group would have sufficient permission.

volume-cache-info

Query RAM cache information for the desired volume.

--vol <VOL_ID> Required. ID of the volume to query cache information.

volume-phy-disk-cache-update

Disable or enable RAM physical disk cache of specific volume.

--vol <VOL_ID> Required. ID of the volume to change.

--policy <POLICY>

Required. Enable or Disable.

volume-read-cache-policy-update

Disable or enable RAM read cache of specific volume.

--vol <VOL_ID> Required. ID of the volume to change.

--policy <POLICY>

Required. Enable or Disable.

volume-write-cache-policy-update

Change volume write cache policy.

--vol <VOL_ID> Required. ID of the volume to change.

--policy <POLICY>

Required. WB for write back mode, WT for write through mode, AUTO for auto mode which use WB mode when any battery is OK and use WT mode else.

local-disk-ident-led-on

Turn on the identification LED for specified disk path. Require permission to open disk path as read-write, normally root user or disk group would have sufficient permission.

--path <DISK_PATH>

Required. Disk path, like /dev/sdb.

local-disk-ident-led-off

Turn off the identification LED for specified disk path. Require permission to open disk path as read-write, normally root user or disk group would have sufficient permission.

--path <DISK_PATH>

Required. Disk path, like /dev/sdb.

local-disk-fault-led-on

Turn on the fault LED for specified disk path. Require permission to open disk path as read-write, normally root user or disk group would have sufficient permission.

--path <DISK_PATH>

Required. Disk path, like /dev/sdb.

local-disk-fault-led-off

Turn off the fault LED for specified disk path. Require permission to open disk path as read-write, normally root user or disk group would have sufficient permission.

--path <DISK_PATH>

Required. Disk path, like /dev/sdb.

ALIAS

ls

Alias of 'list --type systems'

lp

Alias of 'list --type pools'

lv

Alias of 'list --type volumes'

ld

Alias of 'list --type disks'

la

Alias of 'list --type access_groups'

lf

Alias of 'list --type fs'

lt

Alias of 'list --type target_ports'

lb

Alias of 'list --type batteries'

c

Alias of 'capabilities'

p

Alias of 'plugin-info'

vc

Alias of 'volume-create'

vrc

Alias of 'volume-raid-create'

vrcc

Alias of 'volume-raid-create-cap'

vilon

Alias of 'volume-ident-led-on'

viloff

Alias of 'volume-ident-led-off'

vd

Alias of 'volume-delete'

vr

Alias of 'volume-resize'

vm

Alias of 'volume-mask'

vu

Alias of 'volume-unmask'

ve

Alias of 'volume-enable'

vi

Alias of 'volume-disable'

vri

Alias of 'volume-raid-info'

pmi

Alias of 'pool-member-info'

ac

Alias of 'access-group-create'

aa

Alias of 'access-group-add'

ar

Alias of 'access-group-remove'

ad

Alias of 'access-group-delete'

srcps

Alias of 'system-read-cache-pct-update'

ldl

Alias of 'local-disk-list'

vci

Alias of 'volume-cache-info'

vpdcu

Alias of 'volume-phy-disk-cache-update'

vrcpu

Alias of 'volume-read-cache-policy-update'

vwcpu

Alias of 'volume-write-cache-policy-update'

ldilon

Alias of 'local-disk-ident-led-on'

ldiloff

Alias of 'local-disk-ident-led-off'

ldflon

Alias of 'local-disk-fault-led-on'

ldfloff

Alias of 'local-disk-fault-led-off'

SIZE OPTION

--size <SIZE>

Storage space size. Format is '<number>' + '<prefix>'. Example:

"10GiB", "20.5MB". No postfix indicates bytes. Valid prefixes are:

KiB,	# 2 ¹⁰ Bytes
MiB,	# 2 ²⁰ Bytes
GiB,	# 2 ³⁰ Bytes
TiB,	# 2 ⁴⁰ Bytes
PiB,	# 2 ⁵⁰ Bytes
EiB,	# 2 ⁶⁰ Bytes
KB,	# 10 ³ Bytes
MB,	# 10 ⁶ Bytes
GB,	# 10 ⁹ Bytes
TB,	# 10 ¹² Bytes
PB,	# 10 ¹⁵ Bytes
EB,	# 10 ¹⁷ Bytes

These prefixes are supported also, but not recommended:

K, M, G, T, P, E, # equal to KiB, MiB, and etc

k, m, g, t, p, e, # equal to KiB, MiB, and etc

FILES

~/.lsmcli lsmcli configuration file, containing name-value pairs separated by '='. The only currently supported configuration option is 'uri', such as 'uri=tar?getd://user@storage.example.com'.

Configuration options in .ismcli are only used if not overridden by command-line option or environment variable.

EXAMPLES (command output omitted for brevity)

Simulator, list pools (no password required)

```
$ ismcli -u sim:// -I POOLS
```

Targetd, list volumes (prompting for password)

```
$ ismcli -u targetd://root@host/ -I VOLUMES -P
```

SMI-S, list systems (prompting for password)

```
$ ismcli -u smispy://username@host:5988/?namespace=root/interop \
-I SYSTEMS -P
```

Targetd, list pools (using env variables for URI and password)

```
$ export LSMCLI_URI=targetd://username@host:18700
$ export LSMCLI_PASSWORD=<password>
$ ismcli -I POOLS
```

SMI-S, create volume (using environment variables for URI and password)

```
$ export LSMCLI_URI='smispy+ssl://user@host:5989?namespace=root/emc'
$ export LSMCLI_PASSWORD=<password>
$ ismcli volume-create --name volume_name --size 1TiB --pool default
```

ENVIRONMENT

LSMCLI_URI The URI for the storage array in question.

LSMCLI_PASSWORD The password to use for the array.

VOLUME REPLICATION TYPES

CLONE A point in time, read writeable, space efficient copy of data.

COPY A full bitwise copy of the data. It occupies the full space.

MIRROR_SYNC Continuously updated, realtime with both copies having identical data.

MIRROR_ASYNC Continuously updated, with a varying amount of delay and data delta between the source and target.

NOTES

Optional search argument

When specifying an optional search argument, it's not considered an error if no search results are found, eg. specifying a non-existent system id. The exit code will be 0.

Plugin installation

Plugins are installed individually except for the simulators which are always included.

Secure sockets layer (SSL)

All of the plugins (except the simulator) support SSL when communicating from the plugin to the array. This is accomplished by adding "+ssl" to the plugin and usually by selecting a different port number from non-SSL communications.

```
$ lsmcli -u smispy+ssl://username@host:5989/?namespace=interop \
    list --type SYSTEMS -P
```

SSL error: certificate verify failed

When using SMI-S plugin with SSL against self-signed SMI-S provider, lsmcli normally quit with 'SSL error: certificate verify failed'. Please contact SMI-S provider support to setup the self-signed certificate in your system. If you prefer to bypass the certificate check, add 'no_ssl_verify=yes' at the end of URI, for example:

```
smispy+ssl://admin@emc-smi:5989?namespace=root/emc&no_ssl_verify=yes
```

BUGS

Please report bugs to <libstoragemgmt-devel@lists.fedorahosted.org>

AUTHOR

Tony Asleson <tasleson@redhat.com>

Gris Ge <fge@redhat.com>

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LSMCLI(1)