Intel® RSTe
Command Line Interface (RSTCLI)
Overview

Rev 1.2
August 2014

Document Revision Table

Revision	Date	Changes
0.8	November 2010	Pre-Alpha Release 3.0.0.1040
1.1	June 2014	RSTe 4.1 minor updates
1.2	August 2014	Removed reverence to RAID 6

Table of Contents

1   Description

RSTCLI is an end user command line utility used to do basic RAID operations on Intel(R) RSTe enabled systems. Intel® RSTe supports RAID0, RAID1, RAID5, and RAID10 volumes. RSTCLI supports creating RAID volumes through the create mode and managing RAID volumes through the Manage mode. In addition there are miscellaneous options such as help, status and version.

2   Options

Options for Intel(R) RSTe are case sensitive. Both long and short versions of the options are given:

Flag	Name	Description
-C	--create	Creates a volume and array if one does not already exist, creates a new volume on an existing array; used to denote Create Mode
-I	--information	Displays controller, array, volume, enclosure and disk information; used to denote Information Mode
-M	--manage	Manages specific components of arrays, volumes and disks; used to denote Manage Mode
-m	--modify	Modifies a volume or an array; used to denote Modify Mode
-h	--help	Prints documentation of how to invoke the program
-r	--rescan	Forces the system to rescan for hardware changes.
-V	--version	Prints version information
-q	--quiet	Suppress output for create, modify and manage. This will limit output to error return codes only. This mode is used to facilitate the use of command line scripts.

2.1   General Usage

The general command line format of the Intel® RSTe 3.0 Command Line Interface (CLI) is as follows:

rstcli [optional mode] <raid-device> [option]{[options]}<component-device>

Note: rstcli.exe is for 32-bit Windows* operating systems and rstcli64.exe is for 64-bit. For the purposes of this document, rstcli will be used.

To see all available commands and options enter the following:

rstcli –-help

To obtain additional information on a particular optional mode enter the following command:

rstcli [mode] –-help

2.1.1   Create

The create option is used to create RAID volumes. To create a RAID volume, enter the following:

```
rstcli --create --level x [--size y] [--strip-size z] --name string    [--create-from-existing diskId] diskId {[diskId]}
```

Create Options:

Flag	Name
-C	--create *Creates a volume and array if one does not already exist. Creates a new volume on an existing array; used to denote Create Mode.*
-E <<host>-<bus>-<target>-<lun>>	--create-from-existing <<host>-<bus>-<target>-<lun>> *If data is to be migrated from one of the disks, specify the disk with this flag. Disk identifier is SCSI address.*
-l	--level
-n <Volume name>	--name <Volume name>
-s	--strip-size
-z <size in GB>	--size <size in GB> *Size in gigabytes. This is an optional switch. If switch is not used or size is specified to 0, then the maximum size available will be used.*

Create Examples:

    -C -l 1 -n Volume 0-1-0-0 0-2-0-0
    --create -l 0 -z 5 --name RAID0Volume 0-3-0-0 0-4-0-0 0-5-0-0
    -C - 1 -E 0-1-0-0 -n VolumeWithData 0-2-0-0
    --create --help

2.1.2   **Information**

The Information option will provide information on arrays, controllers, disks, enclosures and volumes. To obtain the desired information, enter the following:

```
rstcli --information --controller|--array|--disk|--enclosure|--volume {[device]}
```

Information Options:

Flag	Name
-I	--information *Displays controller, array, volume, enclosure, and disk information; used to denote Information Mode.*
-a	--array *Lists information about the arrays on the system.*
-c	--controller *Lists information about the controllers on the system.*
-d	--disk *Lists information about the disks in the system.*
-e	--enclosure

	Lists information about the enclosures on the system.
-v	--volume
	Lists information about the volumes on the system when used in Info mode.
	Stipulates the volume to act on in Modify or Manage.

Information Examples:

   -I -v Volume

   -I -d 0-5-0-0

   --information --array Array_0000

   --information --help

2.1.3 **Manage**

The Manage option will be used to manage specific components of arrays, volumes and disks. To perform the desired management function, enter one the following:

```
rstcli --manage --cancel-verify volumeName
   --manage --delete volumeName
   --manage --verify-repair volumeName
   --manage --normal-volume volumeName
   --manage --normal diskId
   --manage --initialize volumeName
   --manage --locate diskId {[diskId]}
   --manage --delete-metadata diskId
   --manage --not-spare diskId
   --manage --volume-cache-policy off|wt|wb --volume volumeName
   --manage --rebuild volumeName --target diskId
   --manage --spare diskId
   --manage --verify volumeName
   --manage --write-cache true|false --array arrayName
```

Manage Options:

Flag	Name
-M	--manage
	Manages specific components of arrays, volumes and disks; used to denote Manage Mode.
-x <Volume name>	--cancel-verify <Volume name>
-D <Volume name>	--delete <Volume name>
-p <Volume name>	--verify-repair <Volume name>
	Verifies and repairs the volume.
-f <Volume name>	--normal-volume <Volume name>
	Marks failed volume as normal.
-F <<host>-<bus>-<target>-<lun>>	--normal <<host>-<bus>-<target>-<lun>>
	Marks failed disk as normal.
-I <Volume name>	--initialize <Volume name>

	Initializes the redundant data on a volume.
-L <<host>-<bus>-<target>-<lun>>	--locate <<host>-<bus>-<target>-<lun>> *Locates device and blinks the LED.*
-T <<host>-<bus>-<target>-<lun>>	--delete-metadata <<host>-<bus>-<target>-<lun>>
-N <<host>-<bus>-<target>-<lun>>	--not-spare <<host>-<bus>-<target>-<lun>> *Resets a spare disk to available.*
-P <Volume name>	--volume-cache-policy <Volume name> *Sets volume cache policy to either off, wt (write-through) or wb (write-back)*
-R <Volume name>	--rebuild <Volume name>
-S <<host>-<bus>-<target>-<lun>>	--spare <<host>-<bus>-<target>-<lun>>
-t <<host>-<bus>-<target>-<lun>>	--target <<host>-<bus>-<target>-<lun>> *Indicates the pass-through disk for a rebuild.*
-U <Volume name>	--verify <Volume name>
-w <true or false>	--write-cache <true or false>

Manage Examples:

  --manage --spare 0-3-0-0

  -M -D VolumeDelete

  -M --normal 0-2-0-0

  --manage -w true -array Array_0000

  -M -U VolumeVerify

  --manage --help

2.1.4 Modify

The Modify option is used to modify volumes and arrays. To perform a modification, enter the one of the following:

```
rstcli --modify --volume VolumeName --add diskId {[diskId]}
   --modify --volume VolumeName --expand
   --modify --volume VolumeName --level L [--add diskId {[diskId]}   [--strip-size s]
   --modify --volume VolumeName --name n
```

  Modify Options:

Flag	Name
-m	--modify
-A <<host>-<bus>-<target>-<lun>>	--Add <<host>-<bus>-<target>-<lun>>
-X	--expand
-l <0, 1, 5, 10>	--level <0, 1, 5, 10> *Raid level options are 0, 1, 5 and 10.*
-n	--name
-s <size in KB>	--strip-size <size in KB> *Strip size in kilobytes (2^{10} bytes). Valid for RAID 0, RAID 5 and RAID 10.* *Options are 4, 8, 16, 32, 64 and 128.*
-v	--volume

Modify Examples:

   -m -v Volume_0000 -A 0-3-0-0 0-4-0-0

   -m --volume ModifyVolume --level 5

   --modify -v Volume -n RenameVolume

   --modify --help

2.1.5   **Rescan**

The Rescan option is used to force the system to rescan for hardware changes. To perform a system rescan, enter the following:

```
rstcli --rescan (or -r)
```

2.1.6   **Quiet**

The Quiet option is used to suppress output for create and manage. This option is not valid for information mode. To initiate quiet mode, enter the following:

```
rstcli --quiet (or –q)
```

2.1.7   **Ignore**

The Ignore option is used to ignore the rest of the labeled arguments that follow this flag. To use the Ignore options, enter the following:'

```
rstcli --ignore_rest (or --)
```

2.1.8   **Version**

The Version option will print the version information of the driver, OROM, middleware and rstcli components that are installed on the system

```
rstcli --version
```

This output will resemble the following.

```
Intel(R)RSTCLI
   Middleware Version: <major>.<minor>
   Driver Version: <major>.<minor>
   OROM Version: <major>.<minor>
```

3   Return Codes

Return codes listed are generalized. Specific details returned will depend on the call being made.

Code	Return	Description
0	SUCCESS	Successful completion of request
1	FAILURE	At least some part of request failed
2	INVALID_REQUEST	Unrecognized command; request formatted incorrectly
3	INVALID_DEVICE	Request not formatted correctly, device passed in does not exist. Detail return message will include device identifier and operation. Detail message will be returned unless --quiet switch is used.
4	REQUEST_FAILED	Request was formatted correctly but failed to execute. Detail message will be returned unless --quiet switch is used.
5	REQUEST_UNSUPPORTED	Request is not supported on this system. Request was formatted correctly, but is not supported on this system (this would probably indicate a bug, as unsupported requests should result in an INVALID_REQUEST return).
6	DEVICE_STATE_INVALID	Device specified in this request is not in a state that supports this operation. Detail message will include device identification and state that device is in. Detail message will be returned unless --quiet switch is used.

Code	Return	Description
20	INVALID_STRIP_SIZE	Strip size is not supported
21	INVALID_NAME	Name of volume is too long or has invalid characters
22	INVALID_SIZE	Size requested is invalid
23	INVALID_NUMBER_DISKS	Number of disks is invalid
24	INVALID_RAID_LEVEL	RAID level requested is not valid