Intel® RAID Controller Command Line Tool 2 User Guide

Order Number: E36092-002

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Preface

The Intel® RAID Controller Command Line Tool 2 utility is provided for DOS*, Linux*, or Microsoft Windows* to configure and view a RAID controller, physical and logical drives, initialize and perform consistency checks, and view the battery back-up status and event logs.

This utility is for SAS Software Stack products, including the Intel® RAID Controllers SRCSAS18E, SRCSAS144E, SROMBSAS18E, SRCSASJV, SRCSASRB, SRCSATAWB, SROMBSASFC, SROMBSASMP2, SROMBSASMR, SRCSASPH16I, SRCSASBB8I, SRCSASLS4I, RS2BL080, RS2BL080DE, RS2BL040, RS2PI008DE and RS2PI008, and onboard ICHx/ESB2 and 106x controllers under ESRTII mode (Linux* or Microsoft Windows* only).

Note: Previous Software Stack 2 SCSI/SATA controllers should use the Intel® RAID Controller Command Line Tool, not the Intel® RAID Controller Command Line Tool 2.

Syntax Notes

Most Intel® RAID Controller Command Line Tool 2 commands include a parameter that defines the RAID controllers or drives to be affected by the command. The following syntax is used in in this guide to refer to parameter choices that you must make when issuing commands:

- a[controller] or l[drive] means the following choices are available:
  - -a[controller] or –l[drive]: Issue the command for one RAID controller or drive where [controller] or [drive] is replaced by the number of the RAID controller or drive
  - -a0,1,2 or -l0,1,2: Issue the command for two or more RAID controllers or drives where 0,1,2 are the RAID controllers or drives on which to issue the command
  - -aALL or -LALL: Issue the command for all RAID controllers or drives
- { } The parameter is optional
- | indicates a choice between parameters. See the list of parameters to determine the appropriate selection
- Silent (no messages)
- The AppLogFile filename command saves the command log into specified file
- The Nolog command disables the option to save the command log

Manual Organization

Chapter 1 provides a list of commands by function. The command syntax is not complete in this chapter. When you find the command you need to use, see the alphabetical list of commands in Chapter 2 for the correct syntax.

Chapter 2 provides an alphabetical list of commands with the full syntax and command usage.

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1 Command List by Function

The commands displayed in this chapter do not include the command line with parameters. Use this chapter to determine the command you need to use, and then refer to the alphabetical list of commands in Chapter 2 for the correct parameters.

Notes:

- Only some commands and partial parameters are available on Intel® Embedded Server RAID Technology II (ESB2, 1064E). For example, for both Set/Get Adapter Properties, only the RR, Bgi CCRate, and Coercion are supported. The only disk enclosure supported is Enclosure 0 (E0).
- If User Account Control (UAC) is enabled on Vista, you cannot communicate with the RAID controller.

Table 1. Command List by Function

Functional Group	Command	Command Function
Get utility information		
	-h -help -?	Show a list of commands
	-v	Show the version of the command utility
Display RAID controller properties		
	-AdpCount	Show the number of RAID controllers
	-AdpAllInfo	Show information on a RAID controller
	-AdpGetProp	Show specific properties about a RAID controller
	-AdpAutoRbld	Show information on automatic rebuild
	-AdpBIOS	Show the BIOS settings
	-AdpGetTime	Show the date and time
	-AdpGetConnectorMode	Show the connector mode
Change the RAID controller configuration		
	-AdpSetProp	Set multiple properties
	-AdpFacDefSet	Restore the RAID controller to the factory defaults
	-AdpAutoRbld	Enable or disable automatic rebuilds
	-AdpBIOS	Change the settings for stopping processing if POST encounters an error
	-AdpSetTime	Set the date and time
	-AdpCacheFlush	Flush the RAID controller cache

Functional Group	Command	Command Function
	-AdpFWFlash	Flash the RAID controller firmware
	-AdpM0Flash	Perform a special firmware flash
	-AdpSetVerify	Check against a file
	-AdpSetConnectorMode	Set the connector mode
	-AdpShutDown	Shut down the RAID controller
	-AdpSetSASA	Sets the controllers SAS address
	-AdpPRSetDelay	Sets the time between Patrol Read iterations
	-PhyInfo	Show the PHY information
Display physical drive properties		
	-PDGetNum	Show the number of physical drives
	-PDList	List the physical drives
	-PDInfo	Show information about a specific drive
	-PDGetMissing	List missing drives
Force the state of physical drives		
	-PdFwDownload	Flashes the firmware with the file specified
	-PDOnline	Force a drive to go online
	-PDOffline	Force a drive to go offline
	-PDLocate	Start or stop identifiying a drive
	-PDMakeGood	Force a physical drive to the state of Good
	-PDMarkMissing	Mark a physical drive to the state of Missing
	-PDReplaceMissing	Mark physical drive as a replacement
	-PDPrpRmv	Set a physical drive to be removed or undo the removal setting
	-PDClear	Clear a physical drive
	-PDHSP	Configure a hot-spare drive
Display logical drive properties		
	-CfgDsply	Show the logical drive configuration
	-CfgFreeSpaceInfo	Show the free space on a logical drive
	-LDInfo	Show array information
	-AdpBootDrive	Show the boot array
	-LDPDInfo	Show the physical drives in an array
	-LDGetNum	Show the number of arrays
	-LDGetProp	Show the cache properties of an array

Functional Group	Command	Command Function
Configure logical drives		
	-CfgLdAdd	Configure a RAID 0 or RAID 1 array
	-CfgEachDskRAID0	Configure RAID 0 drives
	-CfgSpanAdd	Configure a span to create a RAID 10 array
	-CfgLdDel	Delete an array
	-LDRecon	Reconstruct an array
	-LDSetProp	Set the properties for an array
	-AdpBootDrive	Set a boot array
Load, save, or clear a configuration from a file or from another drive		
	-CfgClr	Clear a configuration
	-CfgSave	Save a configuration to a file
	-CfgRestore	Restore a configuration
	-CfgForeign	Clear an imported configuration
Start or stop a rebuild, consistency check, or initialization		
	-PDRbld	Start, stop, or show the rebuild progress
	-PDReplace	Replace a missing drive
	-LDInit	Start, stop, or show the progress of an array initialization
	-LDCC	Start, stop, or show the progress of a consistency check
	-LDBI	Start, stop, or show the progress of a background initialization
	-AdpPR	Start, stop, or show the progress of a patrol read
	-AdpPRSetDelay	Set the delay for a patrol read
Control the event log		
	-FwTermLog	Clear or show the online firmware log
	-PhyErrorCounters	Show the error counter per PHY
	-AdpEventLog	Clear or show an event log
View or control the battery or enclosure		
	-AdpBbuCmd	Show or configure the battery backup
	-AdpBatTest	Test the battery backup
	-EncInfo	Show enclosure information by RAID controller
	-AdpDiag	Show RAID controller diagnostics

2 Alphabetical List of Commands

?

Description

Shows the list of available commands

Syntax

```
CmdTool2 -?
```

Parameters

None

Example

```
CmdTool2 –?
```

AdpAllInfo

Description

Displays cluster state, BIOS, alarm, firmware version, BIOS version, battery charge counter value, ebuild rate, bus number/device number, present RAM, memory size, serial number of the board, and SAS address.

Syntax

```
CmdTool2 -AdpAllInfo –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 –AdpAllInfo –a1
```

AdpAutoRbld

Description

Enable or disable auto rebuild if hot spare is enabled. This command also determines whether drive insertion will cause an autostart rebuild.

Syntax

```
CmdTool2 -AdpAutoRbld –Enbl | -Dsbl | -Dsply -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-Enbl`: Enable auto rebuilds

`-Dsbl`: Disable auto rebuilds

`-Dsply`: Display the current setting

Example

```
CmdTool2 -AdpAutoRbld –Enbl –a1
CmdTool2 -AdpAutoRbld -Dsbl –a1,2
```

AdpBatTest

Description

This command tests the battery back up device and is only valid if a battery back-up unit is installed.

Syntax

```
CmdTool2 -AdpBatTest -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -AdpBatTest -aALL
```

AdpBbuCmd

Description

Displays complete information about the BBU,

Syntax

```
CmdTool2 -AdpBbuCmd –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -AdpBbuCmd –a1
```

AdpBIOS

Description

Enables, disables, or displays the BIOS status on the selected RAID controller.

Syntax

```
CmdTool2 -AdpBIOS –Enbl | -Dsbl | -Dsply | SOE | BE -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-Enbl`: Enable the BIOS on the RAID controller

`-Dsbl`: Disable the BIOS on the RAID controller

`-Dsply`: Display the BIOS settings on the RAID controller

`-SOE`: Stops POST on BIOS errors

`-BE`: Bypasses BIOS errors during POST

Example

```
CmdTool2 -AdpBIOS –Enbl –a1
```

AdpBootDrive

Description

Set or Display Bootable Virtual Drive ID

Syntax

```
CmdTool2 -AdpBootDrive {-Set –LDID} | -Get -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-Set`: Optional parameter. Set a specified LD as boot drive

`–LDID`: Optional parameter. Logical Drive ID

`-Get`: Display the current bootable Logical Drive ID

Example

```
CmdTool2 -AdpBootDrive -Set –LDID -a[controller]
CmdTool2 -AdpBootDrive -Get -a[controller]
```

AdpCacheFlush

Description

Flush the RAID controller cache.

Syntax

```
CmdTool2 -AdpCacheFlush –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -AdpCacheFlush –a1
```

AdpCount

Description

Display the number of RAID controllers.

Syntax

```
CmdTool2 –AdpCount
```

Parameters

None

Example

```
CmdTool2 –AdpCount
```

AdpDiag

Description

Run diagnostics on a RAID controller.

Syntax

```
CmdTool2 -AdpDiag [val] –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-val`: Time in seconds

Example

```
CmdTool2 -AdpDiag –aALL
```

AdpEventLog

Description

Shows and clears the Event Log. The Event Log is a volatile list of 100 events. When the maximum of 100 events is reached, the oldest events are deleted as new events are added.

Syntax

```
CmdTool2-AdpEventLog –a[controller] Clear | GetEventinfo | GetEvents |
GetSinceShutdown | GetSinceReboot | IncludeDeleted | GetLatest[number] -f
[filename] –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`–Clear`: Clear the event log

`-GetEventInfo`: Displays overall event information

`-GetEvents`: Provides a list of events

`-GetSinceShutdown`: Provides a list of events that have occurred since the last time the system was shut down

`-GetSinceReboot`: Provides a list of events that have occurred since the last time the system was rebooted

`-IncludeDeleted`: Provides a list of events that have occurred since the system shipped out

`-GetLatest [number]`: Provides the most recent number of events, determined by the specified number

`–f [filename]`: Get events from the specified file

Example

```
CmdTool2 -AdpEventLog Clear –a1
CmdTool2 -AdpEventLog GetSinceShutdown –a1,2
CmdTool2 -AdpEventLog GetLatest 25 -f RAIDEvents.log –aALL
```

AdpFacDefSet

Description

Set to Factory Defaults. They are not visible if the RAID controller is already configured.

Syntax

```
CmdTool2 -AdpFacDefSet –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -AdpFacDefSet –a1
```

AdpFwFlash

Description

Flashes a firmware file onto the RAID controller. Use this command with care.

Syntax

```
CmdTool2 -AdpFwFlash -f [filename] {-NoSigChk} {-NoVerChk} -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-NoSigChk`: Do not check the firmware’s signature

`-NoVerChk`: Do not check the firmware file version

`-f [filename]`: The name of the firmware file for the flash update.

Example

```
CmdTool2 -AdpFwFlash -f FlashUpdt –a1
```

AdpGetConnectorMode

Description

Show the connector mode.

Syntax

```
CmdTool2 -AdpGetConnectorMode -Connector** -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-Connector**`: Specified connecotr ID

Example

CmdTool2 –AdpGetConnectorMode –ConnectorAll –a0

AdpGetProp

Description

Display the properties of a RAID controller.

Syntax

```
CmdTool2 –AdpGetProp -[parameter(s)] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-[parameter(s)]`: See the following list of allowed parameters

- `-CacheFlushInterval`: Show the cash flush interval
- `-RebuildRate`: Show the rebuild rate
- `-PatrolReadRate`: Show the patrol read rate
- `-BgiRate`: Show the background initialization rate
- `-CCRate`: Show the consistency check rate

-ReconRate: Show the reconstruction rate

-SpinupDriveCount: Show the pinup drive count

-SpinupDelay: Show the spinup delay time

-CoercionMode: Show the coercion mode

-PredFailPollInterval: Show the interval used to poll for predicting failure

-EccBucketSize: Show the ECC bucket size

-EccBucketLeakRate: Show the ECC bucket leak rate

-EccBucketCount: Show the number of ECC buckets

-ClusterEnable: Show if Cluster is supported

-BatWarnDsbl: Show if the battery warning is disabled

-AlarmDsply: Show the Alarm setting

-SMARTCpyBkEnbl: Show if copyback operation on SMART is enabled.

-AutoDetectBackPlaneDsbl: Detect automatically backplane if the backplane is enabled.

-CopyBackDsbl: Show if the copyback operation is enabled.

-LoadBalanceMode: Show if the load balancing modeis enabled.

-NCQDsply: Show if the native command queueing is enabled.

-SSDSMARTCpyBkEnbl: Show if copyback operation on SMART errors on a SSD is enabled.

-MaintainPdFailHistoryEnbl: Show if maintenance of the history of a failed drive is enabled.

-EnblSpinDownUnConfigDrvs: Show if spindown of unconfigured drives is enabled.

-EnblSSDPatrolRead: Show if the patrol read operation (media scan) on a SSD is enabled.

-AutoEnhancedDsply: Show if the automatic enhanced import of foreign drives is enabled.

-UseFDEOnlyEncrypt: Show encryption on FDE drives.

-EccBucketCount: Count of single-bit ECC errors currently in the bucket.

Example

```
CmdTool2 –AdpGetProp –AlarmDsply –a1
```

```
CmdTool2 –AdpGetProp –RebuildRate -PatrolReadRate –a1
```

AdpGetTime

Description

Display the date and time on a RAID controller.

Syntax

```
CmdTool2 -AdpGetTime –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -AdpGetTime –a1,2
```

AdpM0Flash

Description

Flash the RAID controller in M0 state

Syntax

```
CmdTool2 -AdpM0Flash –f [filename]
```

Parameters

None

Example

```
CmdTool2 -AdpM0Flash –f filename
```

AdpPR

Description

Start, stop, or show the progress of a patrol read.

Syntax

CmdTool2 -AdpPR –Dsbl | -EnblAuto | -EnblMan | -Start | -Stop | -Info `|SSDPatrolReadEnbl | SSDPatrolReadDsbl | {-SetStartTime yyyymmdd hh} |`

```
maxConcurrentPD –a[controller]
```

Parameters

`–Dsbl`: Disable patrol reads

`-EnblAuto`: Enable automatic patrol reads

`-EnblMan`: Enable manual patrol reads

`-Start`: Start a patrol read

`-Stop`: Stop a patrol read

`-Info`: See information about a patrol read

`-SSDPatrolReadEnbl`: Enable the patrol read operation (media scan) on a SSD.

`-SSDPatrolReadDsbl`: Disable the patrol read operation (media scan) on a SSD.

`-SetStartTime yyyymmdd hh`: Set the start time for the patrol read

`-maxConcurrentPD`: Sets the maximum number of concurrent drives.

Example

```
CmdTool2 -AdpPR –Dsbl –a1
```

AdpPRSetDelay

Description

Set patrol read delay interval.

Syntax

```
CmdTool2 –AdpPRSetDelay –val –a[conrtoller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

-val: Time of delay in hours

Example

CmdTool2 –AdpPRSetDelay -1 –a1

AdpSetConnectorMode

Description

Choose to use the internal or external connector on a RAID controller.

Syntax

```
CmdTool2 -AdpSetConnectorMode –Internal | -External –Connector**
-a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`–Internal`: Use the internal connector on the RAID controller

`-External`: Use the external connector on the RAID controller

`-Connector**`: Specified connecotr ID

Example

```
CmdTool2 -AdpSetConnectorMode –Internal –Connector0,1 –a1
```

AdpSetProp

Description

Show RAID controller properties.

Syntax

```
CmdTool2 -AdpSetProp –[parameter(s)] –val -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`–val`: Percent of CPU usage between 0 and 100

`-[parameter(s)]`: See the following list of allowed parameters:

- `-CacheFlushInterval`: Show the cache flush interval
- `-RebuildRate`: Show the rebuild rate
- `-PatrolReadRate`: Show the patrol read rate
- `-BgiRate`: Show the background initialization rate

-CCRate: Show the check consistency rate

-ReconRate: Show the recon rate

-SpinupDriveCount: Show the spinup drive count

-SpinupDelay: Show the spinup delay

-CoercionMode: Show the coercion mode. 0 = none, 1 = 128 Mb , 2 = 1 Gb

-ClusterEnable: Show if clustering is enabled

-PredFailPollInterval: Show the predictive fail poll interval

-EccBucketLeakRate: Show the ECC bucket leak rate

-AlarmEnbl: Enable the alarm

-AlarmDsbl: Disable the alarm

-AlarmSilence: Silence the alarm

-AutoDetectBackPlaneDsbl -val:

val - 0=Enable Auto Detect of SGPIO and i2c SEP.

1=Disable Auto Detect of SGPIO.

2=Disable Auto Detect of i2c SEP.

3=Disable Auto Detect of SGPIO and i2c SEP.

-SMARTCpyBkEnbl: Enable copyback operation on SMART.

-AutoDetectBackPlaneDsbl: Detect automatically the backplane

-CopyBackDsbl: Disable or enable the copyback operation.

-LoadBalanceMode: Disable or enable the load balancing mode.

-NCQEnbl: Enable the native command queueing.

-NCQDsbl: Disable the native command queueing.

-SSDSMARTCpyBkEnbl: Enable copyback operation on SMART errors on a SSD.

-MaintainPdFailHistoryEnbl: Enable maintenance of the history of a failed drive.

-EnblSpinDownUnConfigDrvs: Enable spindown of unconfigured drives.

-EnblSSDPatrolRead: Enable the patrol read operation (media scan) on a SSD.

-AutoEnhancedImportEnbl: Enable the automatic enhanced import of foreign

drives.

`-AutoEnhancedImportDsbl`: Disable the automatic enhanced import of foreign drives.

`-UseFDEOnlyEncrypt`: Use encryption on FDE drives only

Example

```
CmdTool2 -AdpSetProp –AlarmEnbl –a1

CmdTool2 -AdpSetProp –ReconRate -AlarmSilence –a1
```

AdpSetSASA

Description

Sets the controllers SAS address.

Syntax

```
Cmdtool2 –AdpSetSASA str[0-64] –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

This string must be a 64-digit hexadecimal number.

Example

```
cmdTool2 –AdpSetSASA str0 –a1
```

AdpSetTime

Description

Set the date and time on a RAID controller.

Syntax

```
CmdTool2 -AdpSetTime [yyyymmdd] [hh:mm:ss] –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`[yyyymmdd]`: The date to set

`[hh:mm:ss]`: The time to set

Example

```
CmdTool2 -AdpSetTime 20071230 24:00:00 –a1
```

AdpSetVerify

Description

Verify a RAID controller's configuration against a file.

Syntax

```
CmdTool2 -AdpSetVerify -f [filename] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-f [filename]`: Verify the RAID configuration against the contents defined in [filename]

Example

```
CmdTool2 -AdpSetVerify -f RAIDConfig –a1
```

AdpShutDown

Description

Shut down the RAID controller.

Syntax

```
CmdTool2 -AdpShutDown -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -AdpShutDown –a1
```

CfgClr

Description

Clear the RAID controller configuration.

Syntax

```
CmdTool2 -CfgClr -a[controller]
```

Parameters

`-a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -CfgClr -a1
```

CfgDsply

Description

Display the RAID controller configuration and the remaining unconfigured space.

Syntax

```
CmdTool2 -CfgDsply -a[controller]
```

Parameters

`-a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -CfgDsply -a1
```

CfgEachDskRAID0

Description

Configure every physical drive in an Unconfigured-Good state as RAID 0 on the RAID controller. Set the array properties.

Note: You cannot span RAID 0 across a single drive.

Syntax

```
CmdTool2 -CfgEachDskRAID0 -a[controller] {WT | WB} {NORA | RA | ADRA} {Direct |
Cached} {-strpszM}
```

Parameters

`-a[controller]`: The RAID controller affected by the command

`WT`: Optional parameter to define the write through setting

`WB`: Optional parameter to define the write back setting

`NORA`: Optional parameter to define no read ahead

`RA`: Optional parament to define read ahead

`ADRA`: Optional parameter to define adptive read ahead

`Direct`: Optional parameter to define direct I/O

`Cached`: Optional parameter to define cached I/O

`-strpszM`: Optional parameter to set the stripe size. The default is 64 kb.

Example

```
CmdTool2 -CfgEachDskRAID0 –a1 WT RA -Cached
```

CfgForeign

Description

Displays, imports, or clears a foreign configuration.

Syntax

```
CmdTool2 -CfgForeign –Scan | [-SecurityKey password] | -Dsply [x] | -Preview [x]
| -Import [x] | -Clear [x] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command (default is all)

`-SecurityKey`: Lock and unlock access to the secure user data.

-Disply (x) –a[controller]: Displays the foreign configuration

-Import (x) –a[controller]: Imports the foreign configuration.

-Preview (x) –a[controller]: Provides a preview of the imported foreign configuration

-Scan –a[controller]: Scans and displays available foreign configuration

x is the index of for.configs. Optional parament (set to all by default)

Example

```
CmdTool2 –CfgForeign –Clear –a0
```

CfgFreeSpaceinfo

Description

Shows the number of disk groups, spans in each disk group, free space slots in each disk group, the start block, and the size (in blocks and mb) of each free space slot.

Syntax

```
CmdTool2 -CfgFreeSpaceinfo -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -CfgFreeSpaceinfo –a1
```

CfgLDAdd

Description

Configure RAID and determine the attributes of the RAID array.

Syntax

```
CmdTool2 -CfgLDAdd -Rx[E0:Sn] [WB|WT] [NORA|RA|ADRA] [Direct|Cached]
[CachedBadBBU | NOCachedBadBBU ] [ -szXXXXXXXX [-szYYYYYYYY [...]]]
[-strpszM] [-Hsp[E5:S5,...]] [–afterLdX] | -Force [FDE|CtrlBased]
```

Parameters

`–Rx[E0:Sn]`: RAID level 0, 1, 5 or 6 and physical device enclosure/slot numbers for an array

`–WT(Write through), WB(Write back)`e

`–NORA(No read ahead), RA(Read ahead), ADRA(Adaptive read ahead):` Selects read policy.

`–Direct,Cached:` Selects cache policy

`–CachedBadBBU|NoCachedBadBBU`: Specifies whether to use write cache when the BBU is bad

`-strpszM`: Optional parameter to set the stripe size (default is 64 kb)

`–Hsp[Ex:Sx,…]`: Create a global hot spare using a specified physical drive

`–szXXXX`: The size of the logical drive using regular numbers, in MB (the actual size of the logical drive may be smaller as physical drive blocks must be aligned to stripe size; the free space in the array can be used to create a configuration)

`-AfterLdX`: Optional parameter. The slot to use (default is the first slot)

`–Force`eSpecifies the drive coercion is used to make the capacity of the drives compatible.

Example

```
CmdTool2 –CfgLDAdd –R5[E0:S0, E0:S1, E0:S2] –sz10240
```

CfgLdDel

Description

Delete logical drives from a RAID controller.

Syntax

```
CmdTool2 -CfgLdDel -l[drive] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-l[drive]`: The drive(s) affected by the command

Example

```
CmdTool2 -CfgLdDel –l2 –a1
```

CfgRestore

Description

Restore configuration data from a file. The restored data includes all read and write RAID controller and logical drive properties, and the RAID configuration, including hot spares. This command requires identical physical drive device IDs.

Syntax

```
CmdTool2 -CfgRestore –f [filename] –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`–f [filename]`: The data will be restored from the file specified by [filename]

Example

```
CmdTool2 -CfgRestore –f RAIDCOnfig –a1
```

CfgSave

Description

Saves the configuration and properties structure for each RAID controller(s) to a binary file.

Syntax

```
CmdTool2 -CfgSave -f [filename] –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

-f [filename]: The binary file in which the RAID configuration is to be saved

Example

```
CmdTool2 -CfgSave -f RAIDConfig –a1
```

CfgSpanAdd

Description

Creates a RAID level 10, 50 or 60 (spanned) from the specified arrays listed as Arrayn[E0:Sn,...]. The First array is 0. This option requires that at least two arrays are created with the same quantity of physical drives.

Then set values for write thru, write back, or read-ahead, and direct or cached. The parameters must be entered in the order shown.

Syntax

```
CmdTool2 -CfgSpanAdd -r10 | -r50 | -r60 –Array0[E0:Sn] –Array1[E0:Sn] [...]
[{WT | WB}] [{NORA | RA | ADRA}] [{Direct | Cached}] [{-strpszM}] –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-r10`: To create RAID 10 array

`-r50`: To create RAID 50 array

`–r60`: To create RAID 60 array

–Array0[E0:S0, E1:S1]: Uing the specifid enclosure ID and slot ID drives to create Array0

–Array1[E0:Sn] [...]: Uing the specifid enclosure ID and slot ID drives to create Array1

-WT: Set the array to write-through

-WB: Set the array to write-back

-RA: Set the array to read-ahead

-NORA: Set the array to no read-ahead

-ADRA: Otional parameter to define adptive read ahead

-Direct: Otional parameter to define direct I/O

-Cached: Otional parameter to define cached I/O

-strpszM: Optional parameter to set the stripe size (only 64 Kbyte is supported)

Example

```
CmdTool2 -CfgSpanAdd -r10 –Array0[E0:S0, E0:S1] –Array1[E0:S2, E0:S3] –a0
```

EncInfo

Description

Show enclosure information for the RAID controller(s) specified.

Syntax

```
CmdTool2 -EncInfo -a[controller]
```

Parameters

–a[controller]: The RAID controller affected by the command

Example

```
CmdTool2 -EncInfo -aALL
```

FwTermLog

Description

Display or clear the RAID firmware level term log.

Syntax

```
CmdTool2 -FwTermLog -Bbuoff|-BbuoffTemp|-Bbuon|-BbuGet|-Dsply|-Clear a[controller]
```

Parameters

-Bbuoff: Turn off BBU for the RAID firmware level term log protection

-BbuoffTemp: Turn off BBU temporary

-Bbuon: Turn on BBU for RAID firmware level term log protection

-BbuGet: Displays the BBU setting for RAID firmware level term log protection

-Dsply: Displays the RAID firmware level term log

-Clear: Clears RAID firmware level term log

Example

```
CmdTool2 –FwTermLog –Dsply –a0
```

h, -help

Description

Displays a list of available commands.

Syntax

```
CmdTool2 -h, -help
```

Parameters

None

Example

```
CmdTool2 –h
CmdTool2 -help
```

LDBI

Description

Set the background initialization per array for each RAID controller.

Syntax

```
CmdTool2 –LDBI -Enbl | -Dsbl | -ProgDsply | -ShowProg | -GetSetting
-l[drive] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-l[drive]`: The drive(s) affected by the command

`-Enbl`: Enables background initialization

`-Dsbl`: Disables the background initialization

`-ProgDsply`: View ongoing background initialization until all background initialization processes are completed or until the user presses a key to exit

`-ShowProg`: Displays the current progress value.

`-GetSetting`: Displays the background initialization status (enabled or disabled)

Example

```
CmdTool2 –LDBI –ProgDsply –l2 –a1
```

LDCC

Description

Starts or stops the consistency check per array for each RAID controller.

Syntax

```
CmdTool2 -LDCC -Start | -Abort | -ShowProg | -ProgDsply -l[drive]
-a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-l[drive]`: The drive(s) affected by the command

`-Start`: Starts a consistency check on the logical drive(s), and then displays the progress/time left

`-Abort`: Aborts a consistency check on the logical drive(s)

`-ShowProg`: Displays a snapshot of an ongoing consistency check

`-ProgDsply`: Displays progress until at least one consistency check is completed or until a key is pressed

Example

```
CmdTool2 -LDCC -ProgDsply –l2 –a1
```

LDGetNum

Description

Show the quantity of Logical Drives.

Syntax

```
CmdTool2 -LDGetNum –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -LDGetNum –a1
```

LDGetProp

Description

Displays Virtural Drive Cache and Access Parameters

Syntax

```
CmdTool2 -LDGetProp -Cache | -Access | -Name | -DskCache –l[drive] –a[controller]
```

Parameters

`-`DskCache: Display the physical disk cache policy

`-l[drive]`: The drive(s) affected by the command

`-Cache`: Display the cache properties

`-Access`: Display the access mode

`-Name`: Display the name of the cache

`-DskCache`: Display the physical disk cache policy

Example

```
CmdTool2 -LDGetProp -Cache –Access –l2
```

LDInfo

Description

Show the name, RAID level, RAID level qualifier, size in MB, state, stripe size, number of drives, and span depth. Display the progress, initialization, BGI, and consistency check.

Syntax

```
CmdTool2 -LDInfo –l[drive] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-l[drive]`: The drive(s) affected by the command

Example

```
CmdTool2 -LDInfo –l2 –a1
```

LDInit

Description

Start, stop, or show the progress of an array initialization.

Syntax

```
CmdTool2 -LDInit {–Start [Fast|Full]} | -Abort | -ShowProg | -ProgDsply -l[drive]
-a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-Start [-full]`: Writes 0s, optional progress display (fast init displays the first 100 Mbs, and full initializes the entire logical drive)

`-Abort`: Aborts the ongoing initialization

`-ShowProg`: Displays the snapshot of the ongoing initialization

`-ProgDsply`: Displays initialization progress until at least one is completed or a key is pressed

`-l[drive]`: The drive(s) affected by the command

Example

```
CmdTool2 -LDInit –Start -full –l0 –a1
```

LdPDInfo

Description

Display the virtual driver and the driver information.

Syntax

```
CmdTool2 -LdPDInfo -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -LdPDInfo –a1
```

LDRecon

Description

Starts the reconstruction of an array by adding or removing drives.

Syntax

```
CmdTool2 -LDRecon {-Start -rX [{-Add | -Rmv} -Physdrv[E0:S0,...]]} |
-ShowProg | -ProgDsply –L[drive] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-`Start: Start the reconstruction

`-rX`: Set the reconstruction RAID level

`-Add`: Add a drive

`-Rmv`: Remove a drive

`-Physdrv[E0:S0,...]`: The drive to add or remove

`-ShowProg`: Displays a snapshot of the ongoing reconstruction

`-ProgDsply`: Displays the reconstruction progress until completion or until a key is pressed

`-l[drive]`: The drive(s) affected by the command

Example

```
CmdTool2 –LDRecon –Start –r5 –Add –Physdrv[E0:S4] –l0 –a0
```

LDSetProp

Description

Sets array attributes including the array name and access parameters.

Syntax

```
CmdTool2 -LDSetProp {-Name [ArrayName]} | -RW | RO | Blocked |
WT | WB | RA | NORA | ADRA | Cached|Direct | -EnDskCache|DisDskCache |
CachedBadBBU|NoCachedBadBBU -L[drive] -a[controller]
```

Parameters

-Name [ArrayName]: Name the array with a defined name [ArrayName]

-RW: Set the array to read-write

-RO: Set the array to read-only

-Blocked: Blocked array access

-WT: Set the array to write-through

-WB: Set the array to write-back

-RA: Set the array to read-ahead

-NORA: Set the array to no read-ahead

-ADRA: Set the array to adaptive read ahead

-Cached, Direct: Selects cache policy

-CachedBadBBU|NoCachedBadBBUe

-EnDskCache, DisDskCache: Enables and disables drive cache

Example

```
CmdTool2 –LDSetProp –RW WB NORA Direct –DisDskCache CachedBadBBU –L0 –a0
```

PdFwDownload

Description

Flashes the firmware with the file specified.

Syntax

```
cmdTool2 –PdFwDownload -PhysDrv[E0:S0,E1:S1,...] -f <filename> -
a[controller]
```

Parameters

–a[controller]: The RAID controller affected by the command

-PhysDrv[E0:S0,E1:S1,...]: The physical drive(s) affected

Example

```
cmdTool2 –PdFwDownload –physDrv[E1:S1] –a1
```

PDClear

Description

Driver initialization

Syntax

```
CmdTool2 -PDClear –Start | -Stop | -ShowProg | -ProgDsply -PhysDrv
[E0:S0,E1:S1,...] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`–Start`: Start initialization on the selected drive

`-Stop`: Stop initialization on the selected drive

`-ShowProg`: Displays a snapshot of the ongoing initialization process

`-Physdrv[E0:S0,...]`: The physical drive(s) affected

`-ProgDsply`: Displays the initialization progress until completion or until a key is pressed

Example

```
CmdTool2 -PDClear –Stop –PhysDrv[E0:S0] –a0
```

PDGetMissing

Description

Display Drives in Missing Status.

Syntax

```
CmdTool2 -PDGetMissing -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -PDGetMissing –a1
```

PDGetNum

Description

Lists the number of physical drives either attached directly to the RAID controller or in enclosures attached to the RAID controller.

Syntax

```
CmdTool2 -PDGetNum –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -PDGetNum –a1
```

PDHSP

Description

Converts a physical drive into a global or dedicated hot spare in the listed array or removes the hot spare. Make sure the capacity of the hot-spare drive is equal to or larger than the capacity of the disks in the array and that it is the same type of drive (SAS or SATA).

Syntax

```
CmdTool2 -PDHSP {-Set [-Dedicated [-ArrayN | -Array0,1,2...]]
[-EnclAffinity] [-nonRevertible]} | -Rmv -PhysDrv[E0:S0,E1:S1,...]
–a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-Dedicated`: Set the spare to a specified array

`-ArrayN`: Specified array by the array ID

`-EnclAffinity`: Set the spare for a specific enclosure's array

`-nonRevertible`: Put the spare in non-revertible mode

`-Rmv`: Changes the physical drive state to ready (removes the hot spare)

`-PhysDrv[E0:S0,E1:S1,...]`: The physical drive(s) affected

Example

```
CmdTool2 –PDHSP –Set –PhysDrv[E0:S0] –a0
```

PDInfo

Description

Shows the drive size, type, serial number, and firmware version for the physical drives connected to the enclosure and RAID controller.

Syntax

```
CmdTool2 -PDInfo -PhysDrv[E0:S0,E1:S1,...] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-PhysDrv[E0:S0,E1:S1,...]`: The physical drive(s) affected

Example

```
CmdTool2 –PDInfo –PhysDrv[E0:S0] –a0
```

PDList

Description

Displays the size, type, serial number, and firmware version for all physical drives attached to a RAID controller.

Syntax

```
CmdTool2 -PDList –a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -PDList –a1
```

PDLocate

Description

Starts and stops flashing the disk activity LED for a drive.

Syntax

```
CmdTool2 -PDLocate {-start | -stop} -physdrv[E0:S0,E1:S1,...]
-a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-start`: Start flashing the LED

`-stop`: Stop flashing the LED

`-physdrv[E0:S0,E1:S1,...]`: The drive for the affected LED

Example

```
CmdTool2 –PDLocate –start –phjysdrv[E0:S0] –a0
```

PDMakeGood

Description

Change the physical drive state from unconfigured-bad to unconfigured-good.

Syntax

```
CmdTool2 -PDMakeGood -PhysDrv[E0:Sn....] | [-Force] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-PhysDrv[E0:Sn...]`: The physical drive(s) affected

`-Force`: Force the drive to the Unconfigured Good state

Example

```
CmdTool2 –PDMakeGood –PhysDrv[E0:S0] –a0
```

PDMarkMissing

Description

Mark the selected physical drive as missing.

Syntax

```
CmdTool2 -PDMarkMissing -physdrv[E0:S0,E1:S1,...] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-physdrv[E0:S0,E1:S1,...]`: The physical drive(s) affected

Example

```
CmdTool2 –PDMarkMissing –physdrv[E0:S0] –a0
```

PDOffline

Description

The state of the physical drive is changed from online to offline. When the drive is offline, it is not available to the RAID controller.

Syntax

```
CmdTool2 -PDOffline -PhysDrv[E0:S....] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-PhysDrv[E0:S....]`: The physical drive(s) affected

Example

```
CmdTool2 –PDOffline –PhysDrv[E0:S0] –a0
```

PDOnline

Description

The state of the physical drive is changed from offline to online. An online drive is defined as one that is working normally and is a part of a configured logical Drive.

Syntax

```
CmdTool2 -PDOnline -PhysDrv[E0:Sn....] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-PhysDrv[E0:Sn....]`: The physical drive(s) affected

Example

```
CmdTool2 –PDOnline –PhysDrv[E0:S0] –a0
```

PDPrpRmv

Description

Prepare an unconfigured physical drive(s) for removal. The drive is spun down and the drive state is set to unaffiliated, which marks it as offline even though it is not a part of the configuration.

Syntax

```
CmdTool2 -PDPrpRmv [-Undo] –PhysDrv[E0:Sn....] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`[-Undo]`: Marks a drive as unconfigured-good

`–PhysDrv[E0:Sn....]`: The physical drive(s) affected

Example

```
CmdTool2 –PDPrpRmv –PhysDrv[E0:S0] –a0
```

PDRbld

Description

Start, stop, or display the progress of a physical disk rebuild. The command begins immediately if not in DOS. The drive affected must be part of an array and have sufficient capacity.

Syntax

```
CmdTool2 -PDRbld –Start | -Stop | -ShowProg | -ProgDsply –PhysDrv [E0:Sn....] -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`–Start`: Start the physical disk rebuild

`-Stop`: Stop the physical disk rebuild

`-ShowProg`: Displays a snapshot of the ongoing rebuild

`-ProgDsply`: Displays the rebuild progress until completion or until a key is pressed

Example

```
CmdTool2 –PDRbld -Start –PhysDrv[E0:S0] –a0
```

PDReplaceMissing

Description

Replaces the configured physical drive, and then starts an automatic rebuild. The specified array, index and row must be a missing drive.

Syntax

```
CmdTool2 -PDReplaceMissing –PhysDrv[E0:Sn] –ArrayX –RowY -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`–PhysDrv[E0:Sn]`: The physical drive(s) affected

`–Array[X]`: Specifies the array ID

`-Row[Y]`: Specifies the physical drive location

Example

```
CmdTool2 –PDReplaceMissing –PhysDrv[E0:S0] –Array0 –Row1 –a0
```

PhyErrorCounters

Description

Displays the error counter for each PHY.

Syntax

```
CmdTool2 -PhyErrorCounters -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

Example

```
CmdTool2 -PhyErrorCounters –a0
```

PhyInfo

Description

Displays information about the PHY of the specified port ID.

Syntax

```
CmdTool2 -PhyInfo -phyM -a[controller]
```

Parameters

`–a[controller]`: The RAID controller affected by the command

`-phyM`: Specifies the PHY ID

Example

```
CmdTool2 -PhyInfo -phyM –a1
```

V

Description

Displays the version of the Intel® RAID Controller Command Line Tool 2 program.

Syntax

```
CmdTool2 -v
```

Parameters

None

Example

```
CmdTool2 -v
```