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Getting Started with the Command Line Utility

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This chapter explains how your Adaptec product supports the use of one of these command line utilities:

- **ARCCONF** - for Adaptec RAID controllers
- **HRCONF** - for Adaptec HostRAID products

Each utility allows you to:

- Create and delete logical drives
- Display and modify a limited set of configuration settings
- Copy configurations from one computer to another
- Recover from a failed physical drive and rebuild an affected logical drive
- Flashes new firmware and BIOS onto the controller
- Enables the controller to check the removal and connection of any disk drives
- Restores the controller configuration (**HRCONF** only)
- Automatically update Windows drivers (**ARCCONF** only)
- Provides access to the status and event logs of a controller (**ARCCONF** only)
- Isolate problems and determine their causes (**ARCCONF** only)
Getting Started with the Command Line Utility

Installing the Command Line Utility

Both command line utilities are provided on the Adaptec Storage Manager CD. The utility (ARCCONF or HRCONF) is automatically installed in the same directory as Adaptec Storage Manager and must remain there.

Installing on Windows

To install ARCCONF or HRCONF on Windows systems:

1. Start the computer.
2. After Windows starts, insert the Adaptec Storage Manager CD.
3. When the installation program starts, follow the on-screen instructions.

Installing on Linux

To install ARCCONF or HRCONF on Linux systems:

1. Start the computer.
2. After Linux starts, insert the Adaptec Storage Manager CD.
3. Mount the Adaptec Storage Manager CD:
   - Red Hat: mount /dev/cdrom /mnt/cdrom
   - SuSE: mount /dev/cdrom /media/cdrom
4. Change to the cdrom directory:
   - Red Hat: cd /mnt/cdrom/linux/manager
   - SuSE: cd /media/cdrom/linux/manager
5. Extract the RPM package and install it:
   - rpm --install ./StorMan*.rpm
6. Unmount the Adaptec Storage Manager CD:
   - Red Hat: umount /mnt/cdrom
   - SuSE: umount /media/cdrom
Getting Started with the Command Line Utility

Installing on NetWare

To install ARCCONF or HRCONF on NetWare:

You need the latest Support Pack for your operating system so you can run the supported Java Virtual Machine (JVM). You need JVM version 1.3 or later. To check your JVM version, load JVM, type `JAVA -VERSION`.

Note: For the latest updates from Novell, visit www.novell.com.

1. Insert the Adaptec Storage Manager CD.
2. From the command prompt, type `load cdrom` and press Enter. From the command prompt, type:
   
   `xx_yy_zz:\netware\manager\install`
   
   where `xx` is the product CD, `yy` is the version number, and `zz` is the release number. For example:
   
   `adptcd_v2_01`
   
   The installation program starts.
3. Follow the on-screen instructions to complete the installation.

Starting the Command Line Utility

To start ARCCONF or HRCONF, enter one of the following commands:

- **Windows:** `c:\<install_dir*>\<name of utility>.exe`
- **Linux:** `/usr/StorMan/<name of utility>`
- **NetWare:** `load <name of utility>`

`install_dir*` is the directory where the utility is installed and `name of utility` is ARCCONF or HRCONF.

To see a list of available commands, type ARCCONF or HRCONF at the prompt. The utility command functions are detailed in the next chapter, *Using the Command Line Utility.*
Using the Command Line Utility

In this chapter...

ARCCONF Commands................................................................. 11
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This chapter explains how to use the command line utility interactively or in batch mode. With interactive mode, enter commands at the prompt. In batch mode, create scripts and run the script in the appropriate shell. For example:

<table>
<thead>
<tr>
<th>Environment</th>
<th>Batch File</th>
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</thead>
<tbody>
<tr>
<td>Windows</td>
<td>.bat</td>
<td>CMD.EXE</td>
</tr>
<tr>
<td>Linux/Unix</td>
<td>.sh</td>
<td>sh / bash</td>
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</table>

In either mode, if your command fails, you immediately see an error message of Command failed. Other script messages that you can get are Command completed successfully, or Command aborted.

Available commands are described on the following pages, in alphabetical order.
ARCCONF Commands

Perform the following functions from the command line:

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<thead>
<tr>
<th>Command</th>
<th>ARCCONF COMMANDS</th>
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</tr>
<tr>
<td>create</td>
<td>getversion      setname</td>
</tr>
<tr>
<td>delete</td>
<td>rescans         setstate</td>
</tr>
<tr>
<td>driverupdate</td>
<td>romupdate       snapshot</td>
</tr>
<tr>
<td>getconfig</td>
<td>setalarm        task</td>
</tr>
</tbody>
</table>
| getlogs       | setcache        |}

**Command**

`arcconf copyback`

**What it does**

Toggles the controller copyback feature, which attempts to keep drives in the original slot order after rebuilds. Enables or disables the copyback feature.

**Syntax**

`arcconf copyback <Controller#> <ON|OFF>`

**Parameters**

- **Controller#** is the controller number
- **ON** enables the copyback feature
- **OFF** disables the copyback feature

**Example**

`arcconf copyback 1 ON`

**Return values**

- **SUCCESS**: 0x00 indicates the command completed successfully
- **FAILURE**: 0x01 indicates the command has failed
Command
arcconf create

What it does
Creates a new logical drive. You must provide the channel and device ID of the physical drives.
On redundant logical drives, ARCCONF performs autosynchronization.

Syntax
arcconf create CREATE <Controller#>
LOGICALDRIVE [Options] <Size> <RAID#> <CHANNEL#>
DRIVE#> [CHANNEL# DRIVE#] ... [noprompt]

CREATE <Controller#> LOGICALDRIVE RVALUE <LD#>
<LD#> [LD#] ... [noprompt]

Parameters
Controller# is the controller number
Logical Drive indicates the logical drive stripe size with the following options:
● Stripesize <STRIPE>: Optional parameters for specifying a stripe size. STRIPE is specified in kilobytes 16, 32, 64, 128, 256, 512 and 1024 are supported.
● Legs <LEG>: Optional parameters for specifying number of legs.
  ● LEG: Number of legs for RAID level x0.
  ● RAID 50/60: 2 - 16 legs, 3 - 16 drives/leg, 48 drives max.
● Name <NAME>: Optional parameter for specifying the name of the logical device.
● Init_Priority <PRIORITY>: Initialization Priority for logical drive to be created. Valid options are: HIGH, MED, or LOW.
● Init_Method <METHOD>: Initialization method for the logical drive. Valid options include: NORMAL, CLEAR, QUICK.

Size: Indicates the size of the logical drive in megabytes. Use MAX to set size to available space.

RAID#: Indicates the RAID level for the new logical drive. 0, 1, 1E, 10, 5, 5EE, 50, 6, 60, and volume are supported.
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RVolume: RAID Level for a RAID volume logical drive.
LD#: Logical drive numbers for the 2 or more logical drives to be concatenated into the RAID volume.
CHANNEL# DRIVE#: List of space-delimited channel number and device number pairs for each device to add to the logical drive.
noprompt: No prompt for confirmation.

Example
arcconf create 1 logicaldrive stripesize 64 MAX 0 1 0 1 1 1 2
noprompt

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command has failed

Command
arcconf delete

What it does
Deletes a logical drive. All data stored on the logical drive will be lost. Spanned drives can’t be deleted with this function.

Syntax
arcconf delete <Controller#> LOGICALDRIVE <LogicalDrive#> [noprompt]

Parameters
Controller# is the controller number
LogicalDrive# is the number of the logical drive to be deleted.

Example
arcconf delete 1 logicaldrive 1 noprompt
Using the Command Line Utility

Return values
SUCCESS: 0x00 successful termination
FAILURE: 0x01 bad arguments or internal error

Command
arcconf driverupdate

What it does
Updates Windows device drivers. Automatically updates a Windows driver to the version found in the given directory.

Note: Available on Windows systems only.

Syntax
arcconf driverupdate DRIVERUPDATE <DirName>

Parameters
DRIVERUPDATE is the absolute path to the directory containing controller drivers.

Example
arcconf driverupdate
c:\windowsall

Return values
SUCCESS: 0x00 successful termination
FAILURE: 0x01 bad arguments or internal error
**Command**

arcconf getconfig

**What it does**

Lists information about the controllers, logical drives, and physical drives. This information can include (but is not limited to) the following items:

- Controller type
- BIOS, boot block, device driver, and firmware versions
- Logical drive status, RAID level, and size
- Physical drive type, device ID, presence of PFA
- Physical drive state

**Syntax**

arcconf config <Controller#> [AD/LD/PD/AL]

**Parameters**

Controller# is the controller number

AD/LD/PD/AL options:

- **AD**: Adapter information only
- **LD**: Logical drive information only
- **PD**: Physical device information only
- **AL**: All information (optional)

**Example**

arcconf getconfig 1 ad

**Return values**

SUCCESS: 0x00 successful termination

FAILURE: 0x01 bad arguments or internal error
Command
arcconf getlogs

What it does
Obtains controller log information.
Provides access to the status and event logs of a controller. You can retrieve four different types of logs:

- **DEVICE**: Lists any device errors the controller has encountered.
- **DEAD**: Records any occurrences of defunct drives.
- **EVENT**: Lists special events that may have occurred (e.g., rebuilds, LDMs, etc.).
- **UART**: Records low level debug and trace information from the controller.

Syntax
arcconf getlogs GETLOGS <Controller#> <Type>

Parameters
Controller# is the controller number
Type is the type of log to retrieve:

- **DEVICE**: Device error log
- **DEAD**: Dead (failed) drive log
- **EVENT**: Controller event log

Example
arcconf getlogs 1 DEVICE

Return values
SUCCESS: 0x00 successful termination
FAILURE: 0x01 bad arguments or internal error
Using the Command Line Utility

Command
arcconf getstatus

What it does
The GETSTATUS function displays the status of any background command that is currently running.
Displays information about the most recent rebuild, synchronization, logical-drive migration, and compaction/expansion. The information includes the type of operation, status, logical drive number, logical drive size, and percentage of the operation completed.

Note: GETSTATUS reports currently active operations for both ARCCONF commands and commands issued from the Adaptec Storage Manager.

Syntax
arcconf getstatus <Controller#>

Parameters
Controller# is the controller number

Example
arcconf getstatus 1

Return values
SUCCESS: 0x00 successful termination
FAILURE: 0x01 bad arguments or internal error
Using the Command Line Utility

Command
arcconf getversion

What it does
Lists version information for all controllers or a specific controller’s software components, including information about the BIOS, driver, firmware currently running, and firmware that will run after a reboot.

Note: The firmware version that will run after a reboot is called the “staged” firmware.

Syntax
arcconf getversion (use this for information on all controllers)
arcconf getversion <Controller#> (use this for information on a specific controller)

Parameters
<Controller#>

Example
arcconf getversion

Return values
controllers found: 0
FAILURE: 0x01 bad arguments or internal error

Command
arcconf rescan

What it does
Enables the controller to check for the removal of any disk drives in the ready state and to check for the connection of any new disk drives to the controller. The command returns when the rescan is complete.

Syntax
arcconf rescan <Controller#>
Parameters
Controller# is the controller number

Example
arcconf rescan 1

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed

Command
arcconf romupdate

What it does
Allows new firmware and BIOS to be flashed to the controller. A reboot is required for the new firmware to take effect.

Note: This function is only supported in Windows and Linux.

Syntax
arcconf romupdate <Controller#> <BaseName>

Parameters
Controller# is the controller number
BaseName: is the name of the ROM image basename or the fully qualified name if you have a set of controller ROM images.

Note: All UFI files must be in the same directory prior to invoking ARCCONF. If you are copying UFI files from floppy images, be sure to check all images.

Example
[RIGHT] arcconf romupdate 1 ac2200
[RIGHT] arcconf romupdate 1 ac220001.ufi
Using the Command Line Utility

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed

Command
arcconf setalarm

What it does
Sets the state of the controller audible alarm, if present.

Syntax
arcconf setalarm <Controller#> <on|off|silence|test>

Parameters
Controller# is the controller number
on enables the alarm
off disables the alarm
silence silences the currently sounding alarm
test triggers the alarm

Example
arcconf setalarm 1 test
arcconf setalarm 1 silence

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed

Command
arcconf setcache

What it does
Changes a device's cache mode.
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Syntax
arcconf setcache <Controller#> DEVICE <Channel> <ID> <options>

Parameters
Controller# is the controller number
LogicalDrive# is the number of the logical drive whose cache will be altered

- Logical drive options:
  - ron: Read cache enabled
  - roff: Read cache disabled
  - wt: Write-through
  - wb: Write-back
  - wb: Write-back with battery

- Physical drive options:
  - wt: Write-through
  - wb: Write-back

Example
arcconf setcache logicaldrive 1 ron
arcconf setcache device 0 0 wb

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed

Command
arcconf setconfig

What it does
Resets the controller’s configuration.

Syntax
Using the Command Line Utility

**Command**

arcconf setconfig <Controller#> DEFAULT [noprompt]

**Parameters**

Controller# is the controller number

Default: Resets the controller's configuration. Logical drives are deleted, hard drives are reset to the ready state, and any controller settings are reset to default values.

noprompt: No prompt for confirmation.

**Example**

arcconf setconfig 1 default

**Return values**

SUCCESS: 0x00 indicates the command completed successfully

FAILURE: 0x01 indicates the command failed

**Command**

arcconf setname

**What it does**

Rename a logical drive.

**Syntax**

arcconf setname <Controller#> LOGICALDRIVE <LogicalDrive#> <New Name>

**Parameters**

Controller# is the controller number

LogicalDrive# is the number of the logical drive to be renamed

New Name is the new name of the logical drive

**Example**

arcconf setname 1 logicaldrive 1 backup_a

**Return values**

SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed
Command
arcconf setstate

What it does
Redefine the state of a physical device from its current state to the designated state (Hotspare).

Syntax
arcconf setstate <Controller#> <Channel#> <Device#> <State> [LOGICALDRIVE <LD#> [LD#] ... ]

Parameters
Controller# is the controller number
channel# is the channel number for the drive
device# is the device number for the drive.
State:
● HSP: Create a hot spare from a ready drive
● RDY: Remove a hot spare designation
● DDD: Force a drive offline

Example
arcconf setstate 1 0 0 DDD

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed

Command
arcconf snapshot

What it does
Create or manage a logical drive snapshot.
Using the Command Line Utility

Syntax
arcconf snapshot SNAPSHOT <Controller#> <COMMAND> ... [noprompt]

Parameters
Controller# is the controller number

Commands:
- map: Display logical drives and any snapshot state.
- stop <Logicaldrive#>: Remove the snapshot associated with the given Logical drive.
- backup <source Logicaldrive#> <target Logicaldrive#>: Create a new snapshot, copying the full contents of the source to the target.
- nobackup <source Logicaldrive#> <target Logicaldrive#>: Create a new snapshot, copying only changes to the source to the target.

noprompt: No prompt for confirmation.

Example
arcconf snapshot 1 map

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed

Command
arcconf task

What it does
Performs a task on a logical drive.
Using the Command Line Utility

Syntax

arcconf task
TASK START <Controller#> LOGICALDRIVE <LogicalDrive#> <options>[noprompt]
TASK STOP <Controller#> LOGICALDRIVE <LogicalDrive#>
TASK START <Controller#> DEVICE <Channel> <ID> <options>[noprompt]
TASK STOP <Controller#> DEVICE <Channel> <ID>

Parameters

Controller# is the controller number
LogicalDrive# is the number of the logical drive in which the task is to be performed

- Logical drive options:
  - verify
  - verify_fix (Verify with fix)
  - clear

- Physical drive options:
  - verify
  - verify_fix
  - clear
  - initialize

Example

arcconf task start 1 logicaldrive 1 verify
arcconf task start 1 device 0 0 initialize

Return values

SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed
HRCONF Commands

Perform the following functions from the command line:

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<tr>
<th>Command</th>
<th>HRCONF COMMANDS</th>
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</thead>
<tbody>
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<td>create</td>
<td>getversion</td>
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<td>delete</td>
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<td>romupdate</td>
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<tr>
<td></td>
<td>setconfig</td>
</tr>
<tr>
<td></td>
<td>setstate</td>
</tr>
</tbody>
</table>

**Command**

hrconf Backup

**What it does**

For large-scale deployments, stores the current controller and disk drive configuration setting to a specific file. Stored files can be used with the RESTORE command to restore to another controller or disk drive. To restore, the controller or disk drive must have the same configuration as it did before the backup. For example: the same type of controller, same number and type of disk drives with same IDs and channels).

**Syntax**

hrconf backup <Controller#> <File Name>

**Parameters**

Controller# is the controller number

File Name is the relative or absolute path with filename

**Example**

hrconf backup 1 c:\windows\hr2200

**Return values**

SUCCESS: 0x00 indicates the command completed successfully

FAILURE: 0x01 indicates the command failed
Using the Command Line Utility

**Command**

hrconf create

**What it does**

Creates logical drives. You must provide the channel and device ID of the physical drives. On redundant logical drives, HRCNF performs autosynchronization.

**Syntax**

hrconf create <Controller#> LOGICALDRIVE [Options] <Size> <RAID#> <CHANNEL# DRIVE#> [CHANNEL# DRIVE#] ... [noprompt]

**Parameters**

- **Controller#** is the controller number
- **Logicaldrive** indicates the logical drive stripe size with the following options:
  - **Stripesize**: Optional parameters for specifying a stripe size. STRIPE is specified in kilobytes: 16, 32, and 64 are supported.
  - **Name**: Optional parameter for specifying the name of the logical drive to be created.
  - **Init_Priority**: Initialization Priority for logical drive to be created. Valid parameters are either HIGH, MED, or LOW.
  - **Init_Method**: Initialization method for the logical drive. Valid options include: NORMAL, CLEAR, QUICK.
- **Size** indicates the size of the logical drive. MAX is the only size option available.
- **RAID#** indicates the RAID level for the logical drive (0, 1, volume).
- **Channel#** is the channel number for the device.
- **Drive#** is the device number for the device.
- **noprompt**: No prompt for confirmation.

**Example**

hrconf create 1 logicaldrive stripesize 64 max 0 1 0 1 1 1 2
**Return values**
SUCCESS: 0x00 successful termination
FAILURE: 0x00 bad arguments or internal error

**Command**
hrconf delete

**What it does**
Deletes a logical drive. All data stored on the logical drive will be lost. Spanned drives can’t be deleted with this function.

**Syntax**
hrconf delete <Controller#> LOGICALDRIVE <LogicalDrive#> [noprompt]

**Parameters**
Controller# is the controller number
LogicalDrive# is the number of the logical drive to be deleted

**Example**
hrconf delete 1
  logicaldrive 1
  noprompt

**Return values**
SUCCESS: 0x00 successful termination
FAILURE: 0x01 bad arguments or internal error

**Command**
hrconf getconfig

**What it does**
Lists information about the controllers, logical drives, and physical drives. This information can include (but is not limited to) the following items:
Using the Command Line Utility

● Controller type
● BIOS, boot block, device driver, and firmware versions
● Logical drive status, RAID level, and size
● Physical drive type, device ID, presence of PFA
● Physical drive state

Syntax
hrconf getconfig <Controller#> [AD/LD/PD/AL]

Parameters
Controller is the controller number
AD/LD/PD/AL options:
● AD: Adapter information only
● LD: Logical drive information only
● PD: Physical device information only
● AL: All information (optional)

Example
hrconf getconfig 1 ad

Return values
SUCCESS: 0x00 successful termination
FAILURE: 0x01 bad arguments or internal error

Command
hrconf getstatus

What it does
The GETSTATUS function displays the status of any background command that is currently running.

Syntax
hrconf getstatus <Controller#>

Parameters
Controller# is the controller number
Using the Command Line Utility

Example
hrconf getstatus 1

Return values
SUCCESS: 0x00 successful termination
FAILURE: 0x01 bad arguments or internal error

Command
hrconf getversion

What it does
Returns the version information for all controllers.

Syntax
hrconf getversion

Parameters
n/a

Example
hrconf getversion

Return values
controllers found: 0
FAILURE: 0x01

Command
hrconf rescan

What it does
Enables the controller to check for the removal of any disk drives in the ready state and to check for the connection of any new disk drives to the controller. The command returns when the rescan is complete.

Syntax
hrconf rescan<Controller#>
Using the Command Line Utility

Parameters

Controller# is the controller number

Example

hrconf rescan 1

Return values

SUCCESS: 0x00 indicates the command completed
FAILURE: 0x01 indicates the command failed

Command

hrconf restore

What it does

Restores the controller configuration by importing it's configuration settings from a specified file. Deletes the current configuration. The file must have been saved through the BACKUP command from a controller of the same type, same number, and type of physical drives with same channels and device IDs. A reboot is required for the configuration change to take effect.

Syntax

hrconf restore <Controller#> <Filename> [noprompt]

Parameters

Controller# is the controller number
Filename is the name of the file to read the configuration from
noprompt: No prompt for confirmation.

Example

hrconf restore 1 c:\windows\hr2200 noprompt

Return values

SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed
BAD_PATH: 0xFF indicates that the path provided is incorrect
FAILURE: 0xFE indicates an error occurred writing the configuration file

Command
hrconf romupdate

What it does
Updates the controller or enclosure firmware. The ROM image file must be in the same directory prior to invoking hrconf.

Syntax
hrconf romupdate ROMUPDATE <Controller#>
[CONTROLLER] <Filename> ROMUPDATE <Controller#>
ENCLOSURE <Channel#> <Device#> <Filename>

Parameters
Controller# is the controller number
File Name is the relative or absolute path with filename

Example
hrconf romupdate

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed

Command
hrconf setconfig

What it does
Resets the controller’s configuration.

Syntax
hrconf setconfig <Controller#> DEFAULT
[noprompt]
Parameters
Controller# is the controller number
Default: Resets the controller’s configuration. Logical drives are deleted, hard drives are reset to the ready state, and any controller settings are reset to default values.
noprompt: No prompt for confirmation.

Example
hrconf setconfig 1 default noprompt

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed

Command
hrconf setstate

What it does
Redefine the state of a physical device from its current state to the designated state (Hotspare).

Syntax
hrconf setstate <Controller#> <Channel#> <Device#> <State> [LOGICALDRIVE <LD#>[LD#] ... ]

Parameters
Controller# is the controller number
channel# is the channel number for the drive
device# is the device number for the drive
State:
● HSP: Create a hot spare from a ready drive
● RDY: Remove a hot spare designation
● DDD: Force a drive offline
Example
hrconf setstate 1 0 1 HSP
hrconf setstate 1 0 2 RDY
hrconf setstate 1 0 2 RBL

Return values
SUCCESS: 0x00 indicates the command completed successfully
FAILURE: 0x01 indicates the command failed