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PMC-2152156, Issue 4

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# Revision History

<table>
<thead>
<tr>
<th>Issue</th>
<th>Issue Date</th>
<th>Details of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>4</td>
<td>December 2015</td>
<td>Production release.</td>
</tr>
</tbody>
</table>
## Contents

- PMC Adaptec Product Support...................................................................................................................................6
- Software License Agreement......................................................................................................................................7

1 Getting Started with the Command Line Utility....................................................................................................10
   - Installing the Command Line Utility.............................................................................................................10
   - Downloading the Installation Packages...........................................................................................10
   - Starting the Command Line Utility...............................................................................................................10

2 Using the Command Line Utility...........................................................................................................................11
   - ARCCONF Commands...................................................................................................................................11
     - arcconf atapassword....................................................................................................................................12
     - arcconf driverupdate....................................................................................................................................12
     - arcconf expanderlist.....................................................................................................................................13
     - arcconf expanderupgrade............................................................................................................................13
     - arcconf getconfig..........................................................................................................................................14
     - arcconf getlogs.............................................................................................................................................14
     - arcconf getsmartstats...................................................................................................................................16
     - arcconf getversion........................................................................................................................................16
     - arcconf identify............................................................................................................................................17
     - arcconf imageupdate...................................................................................................................................17
     - arcconf list....................................................................................................................................................18
     - arcconf key...................................................................................................................................................18
     - arcconf phyerrorlog......................................................................................................................................19
     - arcconf rescan..............................................................................................................................................19
     - arcconf resetstatisticscounters.....................................................................................................................20
     - arcconf romupdate.......................................................................................................................................20
     - arcconf savesupportarchive........................................................................................................................21
     - arcconf setbiosparams.................................................................................................................................21
     - arcconf setboot............................................................................................................................................22
     - arcconf setcontrollerparam..........................................................................................................................22
     - arcconf setstate............................................................................................................................................23
     - arcconf smp..................................................................................................................................................24
     - arcconf uartlog.............................................................................................................................................25
List of Tables

Table 1: ARCCONF Batch Environments ................................................................. 11
Table 2: ARCCONF Commands .............................................................................. 11
PMC Adaptec Product Support

If you have questions about installing or using your PMC Adaptec product, check this document first—you will find answers to most of your questions. If you need further assistance, use the support options listed below. To expedite your service, have your computer in front of you.

Note: Please visit the Support section of www.adaptec.com for the most up to date contact information.

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- To contact Technical Support, visit our product support site at start.adaptec.com and click on "Contact Support" for options.

Technische Informationen und Support in Deutsch

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1 Getting Started with the Command Line Utility

This utility allows you to:

- Display configuration settings
- Flash new firmware and BIOS onto the controller
- Enable the controller to check the removal and connection of any disk drives
- Provides access to the status and event logs of a controller

Installing the Command Line Utility

Downloading the Installation Packages

Complete these steps to download the ARCCONF installation package for your operating system(s) from the Adaptec Web site:

1. Open a browser window, then type start.adaptec.com in the address bar.
2. Enter your product or adapter model number, then select HBA 1000.
3. Select Storage Manager Downloads, then select Adaptec ARCCONF Command Line Utility from the list of installers.
4. Download the ARCCONF installation package.
5. When the download completes, extract the package contents to the installation directory on your machine (Program Files or /opt, for instance).
6. On Linux systems, ensure that arcconf has 'execute' privilege:
   chmod arcconf.exe +x

Starting the Command Line Utility

1. To start ARCCONF, enter one of the following commands:

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td>&lt;install_dir&gt;\arcconf.exe</td>
</tr>
<tr>
<td>Linux</td>
<td>/&lt;install_dir&gt;/arcconf</td>
</tr>
</tbody>
</table>

   where Install_dir is the directory where the utility is installed.

2. To see a list of available commands, type ARCCONF at the prompt. For help with a specific command, type ARCCONF <command_name> help.
2

Using the Command Line Utility

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, as described in the table below.

Table 1: ARCCONF Batch Environments

<table>
<thead>
<tr>
<th>Environment</th>
<th>Batch File</th>
<th>Run Script</th>
</tr>
</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>
</tr>
</tbody>
</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.

The return values for each command are the same:

- 0x00: SUCCESS
- 0x01: FAILURE - The requested command failed
- 0x02: ABORT - The command was aborted because parameters failed validation
- 0x03: INVALID_ARGUMENTS - The arguments are incorrect. (Displays COMMAND help)

To view a list of commands at the command line, type ARCCONF and press Enter.

To access the online help for a specific command, type ARCCONF <command>, then press Enter.

ARCCONF Commands

The following commands are available in ARCCONF for the Adaptec HBA 1000 Series adapter. The commands are described on the following pages, in alphabetical order. In the command descriptions, <> indicates a required parameter and [] indicates an optional parameter.

Table 2: ARCCONF Commands

<table>
<thead>
<tr>
<th>atapassword</th>
<th>driverupdate</th>
<th>expanderlist</th>
<th>expanderupgrade</th>
<th>getconfig</th>
<th>getlogs</th>
<th>getsmartstats</th>
<th>getversion</th>
<th>identify</th>
<th>imagemupdate</th>
<th>key</th>
<th>list</th>
<th>phyerrorlog</th>
<th>rescan</th>
<th>resetstatisticscounters</th>
<th>romupdate</th>
<th>savesupportarchive</th>
<th>setbiosparams</th>
<th>setboot</th>
<th>setcontrollerparam</th>
<th>setstate</th>
<th>smp</th>
<th>uartlog</th>
</tr>
</thead>
</table>

Note: ARCCONF supports additional commands that are not listed in the table above. This guide describes just the commands that are supported by Adaptec HBA 1000 Series adapters. If you attempt to execute any command that is not described in this guide, the firmware returns an error.
arccconf atapassword

Description
Sets or clears the password for SATA drives.

Syntax
ARCCONF ATAPASSWORD <Controller#> SET <new password> <Channel# ID#> ...
ARCCONF ATAPASSWORD <Controller#> CLEAR <current password> <Channel# ID#> ...

Parameters
new password | current password
New password, current password.
Channel/ID
Lists the space-delimited channel number and device number (ID) pairs for each drive on which to set or clear the password.

Examples
ARCCONF ATAPASSWORD 1 SET uR8ryx 0 1
ARCCONF ATAPASSWORD 1 CLEAR uR8ryx 0 1

arccconf driverupdate

Description
Updates the Windows device driver for the controller.

Note: This command is available on Windows systems only.

Syntax
ARCCONF DRIVERUPDATE <DirName> [nologs]

Parameters
DirName
Absolute path to directory containing the Windows driver.
Nologs
Optional parameter that suppresses log output.

Examples
ARCCONF DRIVERUPDATE C:\WINDOWSALL
arcconf expanderlist

Description

Returns a list of disk drive expanders on a controller.

Syntax

ARCCONF EXPANDERLIST <Controller#>

Parameters

Controller#
  Controller number.

Examples

ARCCONF EXPANDERLIST 1

arcconf expanderupgrade

Description

Allows new firmware to be flashed to an enclosure or expander.

Syntax:

ARCCONF EXPANDERUPGRADE <Controller#> ENCLOSURE <Connector# Channel# ID#> [ChunkSize#] <UpgradeType> <Filename> [Mode#] [noprompt]

Parameters

Controller#
  Controller number.

Channel#
  Channel number of the device to be updated.

ID#
  Device number of the device to be updated.

Connector#
  Connector number of the device to be updated.

ChunkSize#
  Chunk size, in bytes, to be used to update the firmware. Default is 65536 bytes.

Filename
  Name of the firmware update file.

UpgradeType
  EXPANDER—update the firmware image on the expander or enclosure
  MFG—update the manufacturing image (BOOT SEEPROM) on the expander or enclosure
  CPLD—update the CPLD image on the expander or enclosure

Note: MFG and CPLD upgrade types are supported on the Adaptec AEC-82885T expander only.

Mode#
  The Mode parameter applies to EXPANDER and MFG upgrade types only. Valid values are:
  - 2—download microcode only; requires system reset or power cycle to activate (default )
  - 6—download microcode with offsets and activate
  - 7—download microcode with offsets, save, and activate
Noprompt
Optional parameter that suppresses alert messages.

Examples

arccconf EXPANDERUPGRADE 1 ENCLOSURE 2 0 0 1024 EXPANDER C:\FirmwareImage.bin 7
arccconf EXPANDERUPGRADE 1 ENCLOSURE 2 0 0 512 MFG C:\FirmwareImage.rom 6
arccconf EXPANDERUPGRADE 1 ENCLOSURE 2 0 0 256 CPLD C:\CPLDImage.bin noprompt

arccconf getconfig

Description

Lists information about controllers, physical drives, including:

- Controller type, status, World Wide Name (WWN), and mode
- BIOS, boot block, device driver, and firmware versions
- Device type, device ID, presence of PFA
- Physical device state
- Enclosure information: fan, power supply, and temperature status
- Connector/Lane/Phy mapping

Also displays controller BIOS settings if you do not include a device-type keyword.

Syntax

ARCCONF GETCONFIG <Controller#> [AD|PD|AL|CN]

Parameters

Controller#
Controller number

AD/PD/AL...
- AD—Adapter information only
- PD—Physical device information only
- CN—Connector information only
- AL—All information

Examples

ARCCONF GETCONFIG 1
----------------------------------------------
Controller BIOS Setting Information
----------------------------------------------
Runtime BIOS : Enabled
Array BBS Support : Enabled
Physical Drives Displayed during POST : Disabled
Backplane Mode : SGPIO
MissingDrvCount : 8
...

ARCCONF GETCONFIG 1 CN

arccconf getlogs

Description

Provides access to controller status, event logs, and usage statistics, including:

- A log of device errors that the controller encountered
- A log that records any occurrences of defunct devices
- A log of special events that may have occurred
• A log of controller usage statistics, including Inter-I/O Read and Write times and I/O Completion Read and Write times
• A log of supported hardware components on the controller

Syntax

```
ARCCONF GETLOGS <Controller#> <Type1> [clear|tabular] [nologs]
ARCCONF GETLOGS <Controller#> <Type2> [tabular] [nologs]
ARCCONF GETLOGS <Controller#> <Type4> <HardwareType#> [nologs]
ARCCONF GETLOGS <Controller#> DEVICE <clear> <ErrorType#> [<Channel# ID#>|ALL] [nologs]
```

Parameters

**Controller#**
Controller number.

**Type1**
One of the following:

- DEVICE—device error log
- DEAD—dead (failed) drive log
- EVENT—controller event log

**Type2**
One of the following:

- STATS—controller statistics data

**Type4**
One of the following:

1. Cache Memory
2. NVSRAM

**ErrorType**
One of the following:

- 1 - Parity Error Counter
- 2 - Link Failure Counter
- 3 - Hardware Error Counter
- 4 - Aborted Commands Counter
- 5 - Medium Error Counter
- 6 - SMART Warning Counter

**Clear**
Clears the specified log from the controller or a specific error counter for one or all physical drives on a controller.

**Channel/ID**
Channel and number of the physical device on the controller.

**Tabular**
Displays the log or statistics in tabular format.

Examples

```
ARCCONF GETLOGS 1 EVENT
ARCCONF GETLOGS 1 STATS tabular
ARCCONF GETLOGS 1 DEVICE clear 3 ALL
```
**arcconf getsmartstats**

**Description**
Displays SMART statistics for the hard drives and Solid State Drives (SSDs) on a controller.

**Syntax**
ARCCONF GETSMARTSTATS <Controller#> [Tabular]

**Parameters**
- **Controller#**
  - Controller number.
- **Tabular**
  - Creates output in tabular format.

**Examples**
ARCCONF GETSMARTSTATS 1
ARCCONF GETSMARTSTATS 1 TABULAR

**arcconf getversion**

**Description**
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.

**Syntax**
ARCCONF GETVERSION
ARCCONF GETVERSION <Controller#>

**Parameters**
- **Controller#**
  - Controller# is the controller number

**Examples**
ARCCONF GETVERSION
ARCCONF GETVERSION 1
arcconf identify

Description
Identifies a physical device by blinking its LEDs.

Syntax
ARCCONF IDENTIFY <Controller#> DEVICE <Channel# ID#> [TIME <BlinkTime>] [nologs]

Parameters
- **Controller#**
  - Controller number
- **Channel# ID#**
  - Channel number and ID number for the physical device(s) to be identified
- **TIME <BlinkTime>**
  - Time, in seconds, for the LEDs to continue blinking

Examples
ARCCONF IDENTIFY 1 DEVICE 0 0

arcconf imageupdate

Description
Allows new firmware to be flashed to the hard drive.

Syntax:
ARCCONF IMAGEUPDATE <Controller#> DEVICE <Channel# ID# ChunkSize# Filename> [Mode#] [BufferID#] [noprompt]

Parameters
- **Controller#**
  - Controller number.
- **Channel#**
  - Channel number of the device to be updated.
- **ID#**
  - Device number of the device to be updated.
- **ChunkSize#**
  - Chunk size, in bytes, to be used to update the firmware.

  **Note:** For SATA drives, the chunk size must be a multiple of 512.

- **Filename**
  - Name of the firmware update file.
- **Mode#**
  - Firmware update mode. Valid values for physical drives are:
    - 3-(SATA) Download with offsets and save image for immediate and future use
    - 7-(SAS) Download microcode with offsets, save, and activate
- **BufferID#**
  - Mandatory for tape drive firmware update.
### Noprompt
Optional parameter that suppresses alert messages.

### Examples

```
ARCCONF IMAGEUPDATE 1 DEVICE 0 0 16384 ados.lod 3
```

### arcconf key

**Description**

Loads a feature key onto an Adaptec controller.

**Syntax**

```
ARCCONF KEY <Controller#> SET <Key#>
```

**Parameters**

- **Controller#**
  - The controller number.
- **Key#**
  - The key number provided by PMC.

**Examples**

```
ARCCONF KEY 1 SET ABCDEFGHIJKLMNOPQRSTUVWXYZ
```

### arcconf list

**Description**

Lists all controllers in the system or the configuration of a specific controller.

**Syntax**

```
ARCCONF LIST [Controller#]
```

**Parameters**

- **Controller#**
  - The controller number.

**Examples**

```
ARCCONF LIST
ARCCONF LIST 1
```
## arcconf phyerrorlog

### Description
Displays PHY error logs for physical devices on a controller.

### Syntax

```
ARCCONF PHYERRORLOG <Controller#> DEVICE <Channel# ID#>
ARCCONF PHYERRORLOG <Controller#> DEVICE ALL
```

### Parameters
- **Controller#**
  - Controller number.
- **Channel/ID**
  - Channel and number of the physical device on the controller.
- **ALL**
  - Displays PHY error log for all physical devices.

### Examples

```
ARCCONF PHYERRORLOG 1 DEVICE 0 0
ARCCONF PHYERRORLOG 1 DEVICE ALL
```

## arcconf rescan

### Description
Enables the controller to check for the removal of any disk drives and to check for the connection of any new disk drives to the controller. Controller rescan runs in the background, asynchronously. When rescan is started, a message is displayed stating that the process is running in the background and may take 10 minutes to complete. Another message is displayed if a rescan is started while one is already in progress.

### Syntax

```
ARCCONF RESCAN <Controller#> [nologs]
ARCCONF RESCAN ALL [nologs]
```

### Parameters
- **Controller#**
  - The controller number
- **ALL**
  - Rescans all controllers in the system

### Examples

```
ARCCONF RESCAN 1
ARCCONF RESCAN ALL
```
**arcconf resetstatisticscounters**

**Description**
Resets statistics counters for a controller and the logical and physical devices attached to it. Use this command to clear the counters and create fresh statistics, including (but not limited to):
- Read/Write Request Count
- Sectors Read/Written/Flushed
- Unaligned Reads/Writes
- Avg/Max Request Latency
- Max Queue Depth
- Max Request Latency
- Avg Dirty Cache Lines
- Avg Free Processor Ram
- Avg Locked Stripes
- Command Count

**Syntax**
```
ARCCONF RESETSTATISTICSCOUNTERS <Controller#>
```

**Parameters**
- **Controller#**
  - The controller number

**Examples**
```
ARCCONF RESETSTATISTICSCOUNTERS 1
```

**arcconf romupdate**

**Description**
Allows new firmware and BIOS to be flashed to the controller. A reboot is required for the new firmware to take effect.

**Note:**
1. This command is supported in Windows and Linux only.

**Syntax**
```
ARCCONF ROMUPDATE <Controller#> <BaseName> [newversion <build#> [force]] [noprompt] [nologs]
```
**Parameters**

**Controller#**
- The controller number.

**BaseName**
- Absolute path to the controller image file.

**Newversion <build#>**
- Specifies the version of the firmware build.

**Force**
- An optional parameter used to force a down-level firmware update. Valid only if Newversion parameter is specified.

**Noprompt**
- An optional parameter that suppresses the confirmation prompt.

**Examples**

```
ARCCONF ROMUPDATE 1 /usr/home/AC220001.BIN
ARCCONF ROMUPDATE 1 C:\firmwareImage\as483c.bin newversion 12345 force noprompt
```

**arcconf savesupportarchive**

**Description**

Saves configuration and status information to help diagnose a problem with your system. Saved information includes device logs, drive logs, event logs, error logs, controller logs, history logs, basecode logs, and SSD SMART statistics.

By default, the log files are saved in the Support folder in the standard logs directory for your operating system (/var/log for Linux, and so on).

**Syntax**

```
ARCCONF SAVESUPPORTARCHIVE [Path] [Firmware|Arcconf|Storlib|Basecode]
```

**Parameters**

**Path**
- Path to store the log files.

**Log type:**
- One of these log files:
  - Firmware: saves Firmware logs
  - Arcconf: saves Arcconf logs
  - Storlib: saves StorLib logs
  - Basecode: saves basecode logs

**Examples**

```
ARCCONF SAVESUPPORTARCHIVE
ARCCONF SAVESUPPORTARCHIVE Firmware
```

**arcconf setbiosparams**

**Description**

Changes select BIOS settings
Syntax

ARCCONF SETBIOSPARAMS <Controller#> POSTPROMPTTIMEOUT <timeout>

Parameters

Controller#
- Controller number

Subfunction

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>POSTPROMPTTIMEOUT &lt;timeout&gt;</td>
<td>Changes the F1/F2 POST prompt timeout for the controller during system boot. Timeout can have a value between 1-255.</td>
</tr>
</tbody>
</table>

Examples

ARCCONF SETBIOSPARAMS 1 POSTPROMPTTIMECOUNT 10

arcconf setboot

Description

Sets the controller as a boot device for the system. This command is available only when the controller is offline.

Syntax

ARCCONF SETBOOT <Controller#> DEVICE <Channel# ID#> TYPE <Boot Type> [nologs]
ARCCONF SETBOOT <Controller#> ENABLE

Parameters

Controller#
- Controller number

Channel# ID#
- Channel and ID of the physical device to mark as the boot device

TYPE <Boot Type>
- Boot type:
  - Primary - Primary boot device
  - Secondary - Secondary boot device
  - None - Non-bootable

ENABLE
- Sets the controller as a boot controller

Examples

ARCCONF SETBOOT 1 DEVICE 0 5 TYPE secondary
ARCCONF SETBOOT 1 ENABLE

arcconf setcontrollerparam

Description

Changes a parameter of a controller.
**Syntax**

ARCCONF SETCONTROLLERPARAM <Controller#> QUEUEDEPTH <QDepth> [nologs]
ARCCONF SETCONTROLLERPARAM <Controller#> ELEVATORSORT <Enable | Disable> [nologs]
ARCCONF SETCONTROLLERPARAM <Controller#> LATENCY <Latency> [nologs]

**Parameters**

**Controller#**
- Controller number

**QUEUEDEPTH <QDepth>**
- Sets the queue depth for the controller. Valid values are 0, 2, 4, 8, 16, and 32. A value of 0 indicates automatic queue depth.

**ELEVATORSORT**
- Sets the behavior of the controller cache write Elevator sort algorithm.

**LATENCY**
- Sets the flexible latency scheduler. Valid values are:
  - 0: Disable (default).
  - 1: Low. Sets value to 250.
  - 2: Medium. Sets value to 100.
  - 3: High. Sets value to 50.
  - 4: Aggressive level 1. Sets value to 30.
  - 5: Aggressive level 2. Sets value to 10.

**Examples**

ARCCONF SETCONTROLLERPARAM 1 QUEUEDEPTH 16
ARCCONF SETCONTROLLERPARAM 1 ELEVATORSORT disable
ARCCONF SETCONTROLLERPARAM 1 LATENCY 2

**arcconf setstate**

**Description**

Changes the state of a physical device to the designated state.

**Syntax**

ARCCONF SETSTATE <Controller#> DEVICE <Channel#> <Device#> <State> [noprompt]

**Parameters**

**Controller#**
- The controller number

**Channel#**
- The channel number for the drive.

**Device#**
- Device number for the device.

**State**
- RDY—Attempts to change a drive from Failed to Ready.
- DDD—Force a drive offline (to Failed).
- EED—Enable the erased drive.

**Noprompt:**
- No prompt for confirmation.
Examples

ARCCONF SETSTATE 1 DEVICE 0 0 DDD
ARCCONF SETSTATE 1 DEVICE 0 0 RDY

arcconf smp

Description

Sends a SAS Management Protocol (SMP) function request to a SMP target device.

Syntax:

ARCCONF SMP <Controller#> Enclosure <Connector# Channel# Device#> Expander <Expander#> <CommandType1> [ASCII]
ARCCONF SMP <Controller#> Enclosure <Connector# Channel# Device#> Expander <Expander#> <CommandType2 PHY#> [ASCII]

Parameters

Controller#
  Controller number.
Connector# Channel# ID#
  Connector ID, Channel ID and Device ID of the enclosure that contains the expander.
Expander#
  Expander number on the controller (SMP target device).
PHY#
  The PHY Identifier (valid only for Discover and PHY Error Log Request).
CommandType#
  CommandType1:
    • RGR - Report General Request
    • RMR - Report Manufacturer Request
  CommandType2:
    • DR - Discover Request
    • RPELR - Report PHY Error Log Request
ASCII
  Displays the SMP response in ASCII format along with Hex formatted output.

Examples

ARCCONF SMP 1 Enclosure 1 2 0 Expander 0 RGR
ARCCONF SMP 1 Enclosure 1 2 0 Expander 1 DR 0
arcconf uartlog

**Description**

Starts a console for UART command execution.

**Syntax**

ARCCONF UARTLOG <Controller#> CONSOLE [noprompt] [nologs]

**Parameters**

- **Controller#**
  - Controller number
- **CONSOLE**
  - Starts an interactive UART console to run commands. Enter commands one line at a time. Type "exit" to stop.
- **Noprompt:**
  - No prompt for confirmation.

**Example**

ARCCONF UARTLOG 1 CONSOLE