

Adaptec RAID Controller Command Line Utility User's Guide

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Revision History

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BE REQUIRED WHEN CONTACTING TECHNICAL	
SUPPORT.	(S) PRODUCT S/N: XXXXXXXXXXXXXXX

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Adaptec RAID Controller Command Line Utility User's Guide



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1 Getting Started with the Command Line Utility

This chapter explains how your Adaptec[®] by PMC[™] RAID controllers support the use of the ARCCONF command line utility.

This utility allows you to:

- Create and delete logical drives
- Display and modify configuration settings
- Copy configurations from one computer to another
- Recover from a failed physical device and rebuild an affected logical drive
- 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
- Isolate problems and determine their causes

Installing the Command Line Utility

The ARCCONF command line utility is provided on the Adaptec Installation DVD. You can install ARCCONF together with the Adaptec maxView Storage Manager application. Alternatively, if you prefer to install just the command line utility, without also installing the GUI, you can copy just the ARCCONF executable from the installation DVD. (For more information about maxView Storage Manager, see the *maxView Storage Manager User's Guide*.)

Follow the instructions in this section to install ARCCONF with maxView Storage Manager. To install ARCCONF without the GUI, navigate to the folder for your operating system on the installation DVD, select the ARCCONF executable, then copy to your machine. On Linux systems, you may need to give the ARCCONF file execute privileges.

Note: On FreeBSD systems, you must use ARCCONF to perform storage management tasks. FreeBSD does not support the maxView Storage Manager GUI. For more information, see *Installing on FreeBSD* on page 13.

Installing on Windows

To install ARCCONF on Windows systems:

- 1. Insert the Adaptec Installation DVD. The Installation DVD Main Menu opens.
- Select Install maxView Storage Manager.
 The Installation wizard opens. If it doesn't open, select Browse the CD/DVD, then click Autorun.
- 3. Click Next to begin the installation, click I accept..., then click Next.
- 4. Add the following configuration settings:
 - a) CIM Server Port: 5988.
 - b) Web Server Port: 8443.
 - c) User Name default: Administrator
 - d) Operating system password.
- 5. Click **OK** on the password verification window and on the CIM Server and Web Server port number verification window.
- 6. In the Features window, select GUI and Agent and CLI Tools, then click Next.
- 7. Follow the on-screen instructions to complete the installation.



Installing on Red Hat, Cent OS, SuSE, or Fedora Linux

To install ARCCONF on Red Hat, Cent OS, SuSE, or Fedora Linux:

1. Insert the Adaptec Installation DVD.

The Installation DVD mounts automatically. If it doesn't, mount it manually.

- 2. Change to the Linux manager directory: cd /media/cdrom/maxview/linux/manager
- **3.** Install the .bin file:

Options	Description
32-bit	./StorMan-9.00.i386.bin
64-bit	./StorMan-9.00.x86_64.bin

- Enter the following configuration details: Enter your username [default: root].
 Enter your operating system password.
 Enter the CIM Server HTTP Port: [default:5988].
 When the installation completes a confirmation message is displayed.
- 5. Unmount the Adaptec Installation DVD.

Installing on Debian or Ubuntu Linux

To install ARCCONF on Debian or Ubuntu Linux:

- 1. Insert the Adaptec Installation DVD.
- Mount the Adaptec Installation DVD: mount /dev/cdrom /mnt/cdrom
- 3. Change to the Debian manager directory:

Options	Description
32-bit	cd /mnt/cdrom/maxview/debian_x86/manager
64-bit	cd /mnt/cdrom/maxview/debian_x86_64/manager

4. Install the .deb package (xxxxx=build number):

Options	Description	
32-bit	dpkg -i StorMan_9.00_XXXXX_i386.deb	
64-bit	dpkg -i StorMan_9.00_XXXXX_x86_64.deb	

- 5. Enter the following configuration details: Enter your username [default: root]. Enter your operating system password. Enter the CIM Server HTTP Port: [default:5988].
 When the installation completes a confirmation message is displayed.
- Unmount the Adaptec Installation DVD: umount /mnt/cdrom

Installing on Solaris

To install ARCCONF on Solaris:

 Insert the Adaptec Installation DVD. The DVD mounts automatically. If it doesn't, mount the DVD manually, using a command similar to this:



mount -F hsfs -o ro/dev/dsk/clt0d0s2/mnt

- 2. Install the maxView Storage Manager package: pkgadd -d/<mount point>/maxview/solaris_x86/manager/StorMan.pkg
- 3. At the prompt to continue, select y, then press Enter.
- Enter the following configuration details: Enter your username [default: root].
 Enter your operating system password.
 Enter the CIM Server HTTP Port: [default:5988].
 When the installation completes a confirmation message is displayed.
- 5. Eject or unmount the Adaptec Installation DVD.

Installing on FreeBSD

To install ARCCONF on FreeBSD, copy the executable from the installation DVD:

 Insert and mount the Adaptec Installation DVD: mount /cdrom /mnt

Your DVD-ROM drive may have a different device name or path.

Navigate to the maxview/freebsdx/cmdline folder (where x refers to your operating system version).

Note: The distribution includes packages for FreeBSD 7, 8, and 9 (32-bit and 64-bit).

- 3. Copy the arcconf executable to your FreeBSD system.
- 4. Verify that the file has 'execute' privilege.
- 5. Unmount the Adaptec Installation DVD.

Installing on VMware ESX 4.1

Use the following procedure to install the .vib files for VMware ESX 4.1. The installation can be done on an ESX 4.1 console or from a remote system running a Telnet/SSH client.

- 1. Insert and mount the Adaptec Installation DVD.
- 2. Copy the following files to your local ESX 4.1 /tmp directory:
 - vmware-esx-provider-arcconf.vib
 - vmware-esx-provider-arcsmis.vib

The arcconf.vib is for command line communication. The arcsmis.vib is for remote management communication.

3. Stop operations.

/etc/init.d/./sfcbd-watchdog stop

- 4. Check for an existing installation of arcconf. esxupdate --vib-view query | grep arcconf
- 5. Remove the existing installation of arcconf. esxupdate -b < arcconf module name > --maintenancemode remove When the package is removed, you receive the message "The update completed successfully, but the system needs to be rebooted for the changes to be effective".
- **6.** Check for an existing installation of arcsmis. esxupdate --vib-view query | grep arcsmis
- 7. Remove the existing installation of arcsmis. esxupdate -b < arcsmis module name > --maintenancemode remove



When the package is removed, you receive the message "The update completed successfully, but the system needs to be rebooted for the changes to be effective."

- 8. Reboot the system.
- 9. Stop operations.

/etc/init.d/./sfcbd-watchdog stop

10. Install the arcconf package.

esxupdate -b /tmp/vmware-esx-provider-arcconf.vib --nodeps --nosigcheck
--maintenancemode update

When the package is installed, you receive the message "The update completed successfully, but the system needs to be rebooted for the changes to be effective."

11. Install the arcsmis package.

```
esxupdate -b /tmp/vmware-esx-provider-arcsmis.vib --nodeps --nosigcheck
--maintenancemode update
```

When the package is installed, you receive the message "The update completed successfully, but the system needs to be rebooted for the changes to be effective."

- 12. Reboot the system.
- 13. Continue the installation with *Installing on a VMware Guest OS* on page 15.

Installing on VMware ESXi 5.x

Use the following procedure to install the .vib files for VMware ESXi 5.x. The installation must be done from a remote system running a Telnet/SSH client. Use a terminal emulator to access the ESXi server remotely.

- 1. Insert and mount the Adaptec Installation DVD.
- 2. Copy the following files to your local ESXi 5.x /tmp directory:
 - vmware-esx-provider-arcconf.vib
 - vmware-esx-provider-arcsmis.vib

The arcconf.vib is for command line communication.

The arcsmis.vib is for remote management communication.

Stop operations.

/etc/init.d/./sfcbd-watchdog stop

- 4. Check for existing installation of arcconf. esxcli software vib list | grep arcconf
- 5. Remove the existing arcconf package. esxcli software vib remove -n arcconf When the package is removed, you receive the message "Reboot Required: false."
- 6. Check for an existing installation of arcsmis. esxcli software vib list | grep arcsmis
- 7. Remove the existing arcsmis package. esxcli software vib remove -n arcsmis When the package is removed, you receive the message "Reboot Required: false."
- 8. Set the acceptance level if this is the first installation of arcconf and arcsmis: esxcli software acceptance set --level=CommunitySupported
- 9. Install the arcconf package. esxcli software vib install --maintenance-mode --no-sig-check -v /tmp/vmware-esx-provider-arcconf.vib When the package is installed, you receive the message "Reboot Required: false."
- 10. Install the arcsmis package.



```
esxcli software vib install --maintenance-mode --no-sig-check -v /tmp/vmware-esx-provider-arcsmis.vib
```

When the package is installed, you receive the message "Reboot Required: false."

- 11. Reboot the system.
- 12. Continue the installation with *Installing on a VMware Guest OS* on page 15.

Installing on a VMware Guest OS

Note: You must complete the steps in *Installing on VMware ESX 4.1* on page 13 or *Installing on VMware ESX 5.x* on page 14 before continuing.

To install ARCCONF on a VMware guest operating system:

- 1. Insert the Adaptec Installation DVD.
- 2. Go to the ASM-MANAGER-GOS directory for the remote operating system you want to install.
- **3.** Type one of the following commands, depending on the operating system:

Options	Description	
Linux	./StorMan-9.00-19098.esx86_64.bin	
Windows	setup_asm_esx_x64.exe	

Starting the Command Line Utility

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

Options	Description	
Windows	<install_dir>\arcconf.exe</install_dir>	
Linux	/usr/ <install_dir>/arcconf</install_dir>	
Solaris	/usr/StorMan/arcconf	
FreeBSD	/ <install_dir>/arcconf</install_dir>	
VMware	/usr/StorMan/arcconf	

where Install_dir is the directory where the utility is installed.

2. To see a list of available commands, type ARCCONF at the prompt.



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

Environment	Batch File	Run Script
Windows	.bat	CMD.EXE
Linux/Unix	.sh	sh / bash

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. The commands are described on the following pages, in alphabetical order.

Table 2: ARCCONF Commands

atapassword	getsmartstats	saveconfig	setpower
copyback	getstatus	savesupportarchive	setpriority
create	getversion	setalarm	setstate
datascrub	identify	setcache	setstatsdatacollection
delete	imageupdate	setconfig	setvmcredential
driverupdate	key	setcontrollermode	task
failover	modify	setcustommode	uninit
getconfig	playconfig	setmaxcache	
getlogs	rescan	setname	
getperform	resetstatisticscounters	setncq	
	romupdate	setperform	

Note: In the command syntax descriptions, <> indicates a required parameter and [] indicates an optional parameter.

arcconf atapassword

Description

Sets or clears the Secure Erase password for SATA drives. See *arcconf task* for more information about Secure Erase.

Syntax

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

Parameters

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.

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
```

arcconf copyback

Description

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

Syntax

ARCCONF COPYBACK <Controller#> <ON | OFF>

Parameters

Controller#

The controller number On enables the copyback feature Off disables the copyback feature

Examples

ARCCONF COPYBACK 1 ON

arcconf create

Description

Creates a new logical drive, maxCache Container, or JBOD and, optionally, enables logical drive read caching, write caching, and maxCache SSD caching. You must provide the channel and device ID of the physical devices.



On redundant logical drives, ARCCONF performs autosynchronization. ARCCONF presents JBODs as physical devices, not logical drives.

Syntax

```
ARCCONF CREATE <Controller#> <LOGICALDRIVE |MAXCACHE> [Options] <Size> <RAID#> <CHANNEL# DRIVE#> [CHANNEL# DRIVE#] ... [noprompt] [nologs] 
ARCCONF CREATE <Controller#> LOGICALDRIVE RVOLUME <LD#> <LD#> [LD#] ... 
[noprompt] [nologs] 
ARCCONF CREATE <Controller#> JBOD <CHANNEL# DRIVE#> [CHANNEL# DRIVE#] ... 
[noprompt] [nologs]
```

Parameters

Controller#

The controller number.



Logical Drive

Logical Drive indicates the logical drive stripe size with the following options:

- Stripesize <STRIPE>—Allows the logical drive stripe size to be built. Optional parameters for specifying
 a stripe size. STRIPE is specified in kilobytes 16, 32, 64, 128, 256, 512 and 1024 are supported. The
 default is 256KB.
- Legs <LEG>—Optional parameters for specifying number of legs. Value is an integer.
- LEG—Number of legs for RAID level 50 or 60.
 - RAID 50-2-16 legs, 3-32 drives/leg, 128 drives max.
 - RAID 60-2-16 legs, 4-16 drives/leg, 128 drives max.
- Name <NAME>—Optional parameter for specifying the alias name of a logical device that is displayed in the utilities. Value is a string of up to 16 characters.
- Priority <PRIORITY>—Initialization Priority for logical drive to be created. Valid options are: HIGH, MED, or LOW.
- Method <METHOD>—Initialization method for the logical drive. Valid options include: BUILD, CLEAR, QUICK, SKIP. Use SKIP for recovery only (to skip the initialization step).
- Rcache—Sets the logical drive read cache mode:
- RON read cache on
- ROFF read cache off
- Wcache—Sets the logical drive write cache mode:
 - WT write-through disabled
 - WB write-back enabled
 - WBB write-back enabled (when protected by battery or flash backup module)
- MaxCacheReadCache—Sets the logical drive SSD read cache mode:
 - ION maxCache on
 - IOFF maxCache off
- MaxCacheWriteCache—Sets the logical drive SSD write cache mode:
 - ION maxCache on
 - IOFF maxCache off
- MaxCacheWritePolicy—Sets the maxCache write cache policy:
 - WB write back enabled. maxCache will store the data on the SSD and write it back to the hard disks when there is little or no impact on performance. This is the default policy.
 - INSTWB instant write back enabled. In addition to the default policy, maxCache will create "dirty pages" on-the-fly for full-stripe writes if there is room on the SSD and the number of dirty pages is below the threshold.
 - WT write through enabled. Similar to instant write back, but full-stripe writes go to both the cache and hard disk and no dirty pages are created on-the-fly.

This argument is valid only if MaxCacheWriteCache is ION.

Note: For more information about write cache policy, see *arcconf setmaxcache* on page 36.

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. For maxCache, 0, 1, 1E, 5 and Simple_Volume are supported.

Channel# Drive#

Lists the space-delimited channel number and device number pairs for each device to add to the logical drive or maxCache Container. For maxCache, the devices must be SSDs.

Rvolume

RAID level for a RAID volume logical drive.



LD#

Logical drive numbers for two or more logical drives to be concatenated into the RAID volume.

Noprompt

No prompt for confirmation

Examples

ARCCONF CREATE 1 LOGICALDRIVE STRIPESIZE 64 MAX 0 1 0 2 0 3 2 NOPROMPT ARCCONF CREATE 1 JBOD 0 1 NOPROMPT

arcconf datascrub

Description

Toggles the background consistency check modes of the controller.

Syntax

ARCCONF DATASCRUB <Controller#> <on|off|period <DAYS>> [noprompt]

Parameters

Controller#

Controller number.

On

Turns background consistency check on.

Period <DAYS>

Sets the number of days to complete the background consistency check. The minimum value is 10 days (quick), the maximum is 365 days (slow). Setting the period automaically turns background consistency check on.

Noprompt

Optional parameter that suppresses the confirmation prompt.

Examples

ARCCONF DATASCRUB 1 PERIOD 30 ARCCONF DATASCRUB 1 OFF

arcconf delete

Description

Deletes a logical drive, JBOD, or maxCache logical device. All data stored on the logical drive or JBOD will be lost. Spanned drives cannot be deleted with this function.

Syntax

```
ARCCONF DELETE <Controller#> LOGICALDRIVE <LogicalDrive#> <LD#> <LD#> [noprompt]
ARCCONF DELETE <Controller#> JBOD <CHANNEL# DRIVE#> [CHANNEL# DRIVE#] ...
[noprompt]
ARCCONF DELETE <Controller#> LOGICALDRIVE |JBOD ALL [noprompt]
ARCCONF DELETE <Controller#> MAXCACHE
```





Parameters

Controller# Controller# is the controller number

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

LogicalDrive | JBOD ALL Deletes all logical drives or JBODs.

MAXCACHE Deletes the maxCache Container.

Noprompt

Optional parameter that suppresses alert messages.

Examples

```
ARCCONF DELETE 1 LOGICALDRIVE 1 2 3
ARCCONF DELETE 1 JBOD ALL
```

arcconf driverupdate

Description

Updates Windows device drivers. When given a directory name, it will attempt to update a driver to the version found in the given directory.

Note: This command is available only on Windows systems.

Syntax

ARCCONF DRIVERUPDATE <DirName>

Parameters

Driverupdate <DirName>

Directory path containing the driver that you want to update.



ARCCONF DRIVERUPDATE C:\WINDOWSALL

arcconf failover

Description

Turns automatic failover on and off.

Syntax

ARCCONF FAILOVER <Controller#> <on off>

Parameters

Controller# The controller number.

On

Turns the controller failover mode on.

Off

Turns the controller failover mode off.

Examples

ARCCONF FAILOVER 1 ON

arcconf getconfig

Description

Lists information about the controllers, logical drives, physical drives, and flash backup systems. This information includes (but is not limited to) the following:

- Controller type
- BIOS, boot block, device driver, and firmware versions
- Logical drive status, RAID level and size
- maxCache status, fetch and flush rate policy, read/write balance, SSD information
- Device type, device ID, presence of PFA
- Physical device state
- Enclosure information: fan, power supply, and temperature status
- Controller "green backup" information (for AFM-700 flash backup module): status, fuel, temperature readings, voltage, current, errors

Syntax

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

Parameters

Controller# Controller number



AD/LD/PD/AL

- AD—Adapter information only
- LD—Logical drive information only
- PD—Physical device information only
- MC—maxCache information only
- AL—All information (optional)

Examples

ARCCONF GETCONFIG 1 AD

arcconf getlogs

Description

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

- DEVICE—A log of device errors that the controller encountered.
- DEAD—A log that records any occurrences of defunct devices.
- EVENT—A log of special events that may have occurred (rebuilds, LDMs, etc.).
- STATS—A log of controller usage statistics.

Syntax

ARCCONF GETLOGS <Controller#> <Type> [clear|tabular]

Parameters

Controller#

Controller number. Clear clears the specified log.

Туре

One of the following:

- DEVICE
- DEAD
- EVENT
- STATS

Clear

Clears the specified log.

Note: This option is valid only for the DEVICE, DEAD, and EVENT log types.

Tabular

Displays the log or statistics in tabular format.



```
ARCCONF GETLOGS 1 DEVICE
ARCCONF GETLOGS 1 STATS Tabular
```

arcconf getperform

Description

Fetches the parameters that define a logical drive performance mode. Default is the current mode.

Syntax

ARCCONF GETPERFORM <Controller#> [Performance Mode] [Save [Filename]] [Nologs]

Parameters

Controller#

Controller number.

Performance Mode

One of the following:

- 1 Default/Dynamic mode
- 2 OLTP/Database
- 3 Big Block Bypass mode
- 4 User defined mode

Save

Saves the performance mode parameters in a file.

Filename

Name of the file in which to save the parameters. If not specified, the default filename is PerformanceMode.cfg.

Nologs

Suppresses creation of logs for this command.

Examples

ARCCONF GETPERFORM 1 2

arcconf getsmartstats

Description

Displays SMART statistics for the hard drives and Solid State Drives (SSDs) on a controller. **Note:** For more information about SMART statistics, see the maxView Storage Manager User's Guide.

Syntax

ARCCONF GETSMARTSTATS <Controller#> [Tabular]



Parameters

Controller#

Controller number.

Tabular Creates output in tabular format.

Examples

ARCCONF GETSMARTSTATS 1 ARCCONF GETSMARTSTATS 1 TABULAR

arcconf getstatus

Description

The GETSTATUS function displays the status of any background command that is currently running. Including 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:

- 1. GETSTATUS reports currently active operations for both ARCCONF commands and commands issued from the maxView Storage Manager.
- 2. GETSTATUS reports verify, clear, initialize, and secure erase operations on physical devices.
- **3.** GETSTATUS only reports active operations. It does not display information if the operation is completed.

Syntax

ARCCONF GETSTATUS <Controller#>

Parameters

Controller#

Controller# is the controller number

Examples

ARCCONF GETSTATUS 1

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.

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#

Controller# is the controller number

Examples

ARCCONF GETVERSION

arcconf identify

Description

Identifies a physical or logical device by blinking its LEDs.

Syntax

```
ARCCONF IDENTIFY <Controller#> LOGICALDRIVE <LogicalDrive#> ARCCONF IDENTIFY <Controller#> DEVICE <Channel#> <ID>
```

Parameters

Controller# Controller number

Channel/ID Number of the logical drive to be identified

Channel# Channel number for the device to be identified

Device# Device number for the device to be identified

Examples

ARCCONF IDENTIFY 1 DEVICE 0 0 ARCCONF IDENTIFY 1 ALL

arcconf imageupdate

Description

Allows new firmware to be flashed to the hard drive or enclosure.

Syntax: Physical Device Usage

```
ARCCONF IMAGEUPDATE <Controller#> DEVICE <Channel# ID# ChunkSize# Filename>
[Mode#] [noprompt]
ARCCONF IMAGEUPDATE <Controller#> DEVICE <Channel# ID#> [ChunkSize#] <EXPANDER>
<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.

ChunkSize#

Chunk size, in bytes, to be used to update the firmware. For enclosures, the default value is 65536 bytes. **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 devices are:

- 3-(SATA) Download with offsets and save image for immediate and future use
- 7-(SAS) Download microcode with offsets, save, and activate

Valid values for enclosures are:

• DEFER-Download microcode only; requires system reset or power cycle to activate.

Noprompt

Optional parameter that suppresses alert messages.



ARCCONF IMAGEUPDATE 1 DEVICE 0 83 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 ABCD EFGH IJKL MNOP QRST UVWX

arcconf modify

Description

Morphs a logical device from one raid level to another (RAID Level Migration). Expands a logical device from original to one with larger capacity (Online Capacity Expansion). Can be used to make mirrored sets.

Syntax

```
MODIFY <Controller#> FROM <LogicalDrive#>
TO [Options] <Size> <RAID#> <CHANNEL# DRIVE#> [CHANNEL# DRIVE#] [noprompt]
```

Parameters

Controller#

The controller number

From

Indicates that the logical drive to be modified will follow

LogicalDrive#

The logical drive number



ТО

Indicates that the modifications will follow

Options:

- Stripesize—indicates the stripe size in KB. Options are 16, 32, 64, 128, 256, 512, and 1024. the default is 256KB.
- init_priority—is the priority level of the modification. Options are low, med, and high.
- Legs— is the number of subarrays for a RAID level-50 or RAID level 60 array. Possible values are 2-16 legs and 3-16 drives/leg (to 48 drives maximum).

Size is one of the following values:

- MAX indicates that you want to use all available space on the disk.
- Desired size in MB.

RAID# is the RAID level for the logical drive 0, 1, 5, 5EE, or 10.

Note: The CHANNEL# and DRIVE# parameters is the list of devices that will contain the target modification object. Channel and device_ID are repeatable parameters.

Channel# is the channel number for the device.

Drive# is the device_ID (device number) for the device.

Noprompt is an optional parameter that overrides the user prompt.

Example

ARCCONF MODIFY 1 FROM 2 TO 2048 0 0 123 0 124 0 117

arcconf playconfig

Description

Configures a controller using a XML server template file produced by the SAVECONFIG command (see *arcconf playconfig* on page 29). Use this command to deploy the same controller configuration on multiple servers in your storage space.

Note:

- 1. The XML server template file (default, saveconfig.xml) is editable. For example, you may need to change the disk drive capacity, logical drive size, or RAID level.
- 2. Drives from the same vendor with slightly different capacities (147GB vs 150GB, for instance) are considered interchangeable. If the interchange results in a change in logical drive capacity, the drive is scaled, as needed. For example, if the new drives have 4% more capacity due to vendor or model changes, then all logical drives are increased in size by 4%.
- **3.** Be sure to check the log file to verify that the controller was configured successfully. The exit codes, shown below, indicate the success or failure of the operation and if the system needs to be rebooted.

Code	Value	Meaning
SUCCESS	0	Configuration succeeded, no reboot is required.
FAILURE_GENERAL	1	An error occurred and the configuration could not be completed.
SUCCESS_REBOOT	2	Configuration succeeded, but a reboot is required.

Syntax

ARCCONF PLAYCONFIG <Input XML File> [LogFile] [FORCE ALL|LOGICALSIZE]



Parameters

Input XML File

The pathname of the server template file. The default server template file is available at C:\PMCS\Logs\saveconfig.xml.

LogFile

Sets the pathname of the error log file. By default, the error log is available at C:\PMCS\Logs\playconfig.log.

FORCE

Forces deployment of the server even if the controller does not support all features, or the drive capacity does not match the configuration in the input XML file. Use FORCE ALL to force deployment of all features; use FORCE LOGICALSIZE to force deployment of just the logical drives.



ARCCONF PLAYCONFIG server1_config.xml playconfig.log FORCE ALL

arcconf rescan

Description

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# The controller number

Examples

ARCCONF RESCAN 1

arcconf resetstatisticscounters

Description

Resets statistics counters for a controller. Use this command to clear the counters and create fresh statistics.

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 function is only supported in Windows and Linux.



2. Be sure to copy the *.UFI update files from the DVD and not from the BIOS/Firmware update diskettes.

Syntax

ARCCONF ROMUPDATE <Controller#> <BaseName> [Newversion <build#> [Force]] [noprompt]

Parameters

Controller#

The controller number

BaseName

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.

Newversion <build#>

Specifies the version of the firmware build.

Force

An optional parameter used to force a down-level firmware update.

Noprompt

An optional parameter that suppresses the confirmation prompt.

Examples

ARCCONF ROMUPDATE 1 AC2200 ARCCONF ROMUPDATE 1 AC220001.UFI ARCCONF ROMUPDATE 1 AS483C newversion 12345 force noprompt

arcconf saveconfig

Description

Saves the controller configuration to a XML server template file, including the controller type, operational settings, physical drive size, logical drive size, RAID level, and more. Use this file with the PLAYCONFIG command to deploy the same controller configuration to other servers in your storage space; see *arcconf playconfig* on page 29 for more information.

Note: Be sure to check the log file to verify that the configuration XML file was created successfully. The exit codes, shown below, indicate the success or failure of the operation.

Code	Value	Meaning
SUCCESS	0	Configuration XML generated successfully.
FAILURE_GENERAL	1	An error occurred and the configuration XML could not be generated.

Syntax

ARCCONF SAVECONFIG [Input XML File] [LogFile]



Parameters

Input XML File

The pathname of the server template file. The default name (if you omit this parameter) is C:\PMCS\Logs\saveconfig.xml.

LogFile

The pathname of the error log file. By default, the error log is available at C:\PMCS\Logs\saveconfig.log.

Examples

ARCCONF SAVECONFIG server1_config.xml C:\LOGS\SERVER1.LOG

arcconf savesupportarchive

Description

Saves configuration and status information to help Adaptec Customer Support diagnose a problem with your system. Saved information includes (but is not limited to) device logs, drive logs, event logs, error logs, controller logs, and SSD SMART statistics. (For more information about SMART statistics, see *arcconf getsmartstats* on page 24.)

The log files are saved in the Support folder in the standard logs directory for your operating system (/var/log for Linux, the maxView Storage Manager install directory on Windows, and so on).

Note: Unlike the Save Support Archive feature in maxView Storage Manager, this command does not create a zip ("archive") file. It simply saves the support files and logs in the Support folder.

Syntax

ARCCONF SAVESUPPORTARCHIVE

Parameters

None.

Examples

ARCCONF SAVESUPPORTARCHIVE

arcconf setalarm

Description

Sets the state of the controller audible alarm, if present.

Syntax

ARCCONF SETALARM <Controller#> <on|off|silence|test>

Parameters

Controller#

The controller number

On

Enables the alarm



Off

Disables the alarm

Silence Quiets the currently sounding alarm

Test Triggers the alarm

Examples

ARCCONF SETALARM 1 TEST ARCCONF SETALARM 1 SILENCE

arcconf setcache

Description

Changes a logical drive's cache mode.

Syntax

ARCCONF SETCACHE <Controller#> LOGICALDRIVE <LogicalDrive#> <logical mode> [noprompt] [nologs] ARCCONF SETCACHE <Controller#> DEVICE <Channel> <ID> <physical mode> [nologs]

Parameters

Controller#

The controller number

LogicalDrive#

The number of the logical drive whose cache will be altered

Logical mode

Logical drive cache mode:

- RON read cache on
- ROFF read cache off
- WT write through disabled
- WB write back enabled
- WBB write back enabled (when protected by battery or flash backup module)

Channel/ID

Lists the space-delimited channel number and device number pairs for each device to add to the logical drive.

Physical device cache modes

- WT write through disabled
- WB write back enabled



ARCCONF SETCACHE LOGICALDRIVE 1 RON ARCCONF SETCACHE DEVICE 0 0 WB

arcconf setconfig

Description

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

Syntax

ARCCONF SETCONFIG <Controller#> DEFAULT [noprompt]

Parameters

Controller# The controller number

Default

Restores the controller's default configuration.

Noprompt

No prompt for confirmation.

Examples

ARCCONF SETCONFIG 1 DEFAULT

arcconf setcontrollermode

Description

Sets the controller operating mode to one of the following:

- RAID Mode (default)—All RAID functions of the controller are enabled.
- Auto Volume Mode—All RAID functions of the controller are enabled. Attached drives without Adaptec meta-data, but with an OS partition, are surfaced to the host operating system as *Pass Through* devices, where the RAID layer of the controller firmware is bypassed when the host issues commands to the device. Attached drives without Adaptec meta-data and without OS partitions, are automatically configured as Simple Volumes (single drives with Adaptec meta-data), with these settings:
 - Controller read caching is set to "Enabled" for rotating media.
 - Controller write caching is set to "Enabled (write-back) when protected by battery/ZMM" for rotating media.
 - maxCache SSD read and write caching is enabled and the write caching policy is set to "write back" for rotating media.
 - Caching for non-rotating media is disabled.
- HBA Mode—All attached drives are surfaced as Pass Through devices. Changing into HBA mode is allowed only if there are no drives with Adaptec meta-data attached to the controller. Uninitialize the drives before changing to HBA mode (see *arcconf uninit* on page 44).

Note: In HBA Mode, a hot-plugged new drive is automatically configured as a Raw device (see *arcconf uninit* on page 44). When a Raw device is pulled from the system, the controller does not delete internal data structures associated with the drive. However, the missing raw device is not remembered across rescans.



You must reboot the controller after you change the controller mode.

Syntax:

ARCCONF SETCONTROLLERMODE <Controller#> <Controller Mode> [nologs]

Parameters

Controller#

Controller number.

Controller Mode

One of the following values:

- 0 Default/RAID Mode
- 1 Auto Volume Mode
- 2 HBA Mode

nologs

Suppresses log output for the command.

Examples

ARCCONF SETCONTROLLERMODE 1 2 ARCCONF SETCONTROLLERMODE 1 0

arcconf setmaxcache

Description

Enables/disables maxCache SSD caching for one or more logical drives; updates the maxCache write cache policy and "dirty page" threshold (data not committed to disk); adds Solid State Drives to the maxCache pool and removes SSDs from the pool; sets the maxCache read/write balance and cache fetch/flush rate; clears the maxCache pool.

Note: Before you can enable maxCache SSD caching, you must assign at least one SSD to the maxCache pool.

Syntax: Read Caching

ARCCONF SETMAXCACHE <Controller#> LOGICALDRIVE <LogicalDrive#> READCACHE <ENABLE|DISABLE>

Syntax: Write Caching

```
ARCCONF SETMAXCACHE <Controller#> LOGICALDRIVE <LogicalDrive#> WRITECACHE
<ENABLE DISABLE> [WRITEPOLICY <policy>]
ARCCONF SETMAXCACHE <Controller#> LOGICALDRIVE ALL WRITECACHE DISABLE
[WRITEPOLICY <policy>]
ARCCONF SETMAXCACHE <Controller#> LOGICALDRIVE <LogicalDrive#> WRITEPOLICY
<policy>
ARCCONF SETMAXCACHE <Controller#> DIRTYPAGETHRESHOLD <dirtyPageThreshold#>
ARCCONF SETMAXCACHE <Controller#> WBCVALID <ENABLE DISABLE>
```

General Usage

```
ARCCONF SETMAXCACHE <Controller#> <ADDTOPOOL|REMOVEFROMPOOL> <Channel# Device#>
ARCCONF SETMAXCACHE <Controller#> RWBALANCE <Read#> <Write#>
ARCCONF SETMAXCACHE <Controller#> FLUSHANDFETCHRATE <FlushAndFetchRate#>
ARCCONF SETMAXCACHE <Controller#> CLEAR
```



Parameters

Controller#

The controller number.

LogicalDrive#

The number of the logical drive. You can specify one or more logical drives.

Channel#

The channel number for the SSD.

Device#

The device number for the SSD.

Read#/Write#

The read/write ratio for invalidating data on the SSD. When the ratio is reached, the page is removed from the cache. Values range from 1-10 for each parameter.

FlushAndFetchRate#

The read cache fetch rate from 1 to 1000: 1-50=Low, 51-100=Medium, 101-1000=High. The default is 100.

Note: The lower the rate the longer the page is kept on the SSD before it is flushed from the cache.

dirtyPageThreshold#

Controls the amount cache space allocated to "dirty" data; that is, data that has not been committed to disk. The threshold value ranges from 1-100 (percent). Once the percentage of dirty pages crosses the threshold, the data are flushed to disk.

WBCVALID ENABLE DISABLE

Enables and disables write caching in non-redundant maxCache. Applies to all logical drives.

Policy

maxCache write cache policy:

- WB write back enabled. maxCache will store the data on the SSD and write it back to the hard disks when there is little or no impact on performance. This is the default policy.
- INSTWB instant write back enabled. In addition to the default policy, maxCache will create dirty pages on-the-fly for full-stripe writes if there is room on the SSD and the number of dirty pages is below the threshold.
- WT write through enabled. Similar to instant write back, but full-stripe writes go to both the cache and hard disk and no dirty pages are created on-the-fly.

Clear

Clears the maxCache pool.



```
ARCCONF SETMAXCACHE 1 LOGICALDRIVE 1 READCACHE ENABLE
ARCCONF SETMAXCACHE 1 LOGICALDRIVE 1 WRITECACHE ENABLE WRITEPOLICY WT
ARCCONF SETMAXCACHE 1 DIRTYPAGETHRESHOLD 50
ARCCONF SETMAXCACHE 1 ADDTOPOOL 0 1
ARCCONF SETMAXCACHE 1 REMOVEFROMPOOL 0 1 0 2
ARCCONF SETMAXCACHE 1 RWBALANCE 4 1
ARCCONF SETMAXCACHE 1 FLUSHANDFETCHRATE 200
ARCCONF SETMAXCACHE 1 CLEAR
```

arcconf setname

Description

Renames a logical drive.

Syntax

ARCCONF SETNAME <Controller#> LOGICALDRIVE <LogicalDrive#> <New Name>

Parameters

Controller# Controller number

LogicalDrive#

The number of the logical drive to be renamed

New Name

The new name of the logical drive



ARCCONF SETNAME 1 LOGICALDRIVE 1 BACKUP_A

arcconf setncq

Description

Changes the controller's Native Command Queuing (NCQ) setting to enabled or disabled. This setting affects the SATA disk drives on the controller. It takes effect when the SATA drives are restarted.

Syntax

ARCCONF SETNCQ <Controller#> ENABLE DISABLE

Parameters

Controller# The controller number

Examples

ARCCONF SETNCQ 1 ENABLE

arcconf setperform

Description

Changes controller settings based on the application type.

Syntax

ARCCONF SETPERFORM <Controller#> <Performance Mode> [nologs]

Parameters

Controller#

The controller number

Performance Mode

Setting	Behavior
1 (DYNAMIC/Default)	Performance criteria adjusts automatically based on controller usage, RAID level, and disk drive type.
2 (OLTP/Database)	Performance criteria is optimized for transaction- oriented applications such as data entry and retrieval.
3 (Big Block Bypass)	DRAM write cache is bypassed based on IO write size; performance is optimized for serving Web pages and retrieving data.
4 (User-Defined)	User-defined performance mode. Contact Adaptec support for more information.



ARCCONF SETPERFORM 1 2 ARCCONF SETPERFORM 1 3

arcconf setpower

Description

Changes power management settings for disk drives on a controller or logical drive.

Syntax

ARCCONF SETPOWER <Controller#> Stayawake DISABLE | <startime> <endtime>

ARCCONF SETPOWER <Controller#> Spinup <internal#> <external#>

Parameters

Controller#

The controller number

Stayawake

Sets the stayawake period for the disk drives on the controller. During the stayawake period, the disk drives always operate at their peak spin rate.

Disable

Is a keyword that disables the stayawake period for the disk drives on a controller.

starttime

Specifies the beginning of the stayawake period, in the form HHMM (24-hour format)

endtime

Specifies the end of the stayawake period, in the form HHMM (24-hour format).

Spinup

Sets the spin-up limits for the controller—the maximum number of drives that the controller may spin up at one time.

internal#

The maximum number of internal drives that the controller may spin up at one time, from 0-20.

external#

The maximum number of external drives (such as the drives in a JBOD) that the controller may spin up at one time, from 0-20.

LogicalDrive#

The logical drive number.

Slowdown st#

Sets the disk drive slow-down timer, in minutes. Valid values are 0 (never), 3, 5, 10, 20, 30, 60, 120, 180.

Poweroff pt#

Sets the disk drive power-off timer, in minutes. Valid values are 0 (never), 3, 5, 10, 20, 30, 60, 120, 180.

Verify vt#

Sets the period of inactivity, in hours, after which an inactive drive (a drive that's already powered down) is restarted to verify its operating condition. Once the check is completed, the drive is powered down and returns to its inactive state. Valid values are 0 (never), 1, 2, 3, 8, 12, 24.



Note: For the Slowdown, Poweroff, and Verify timers, st# must be less than pt#, and pt# must be less than vt#. You can set one or more timers, in any order, in a single command. Keep in mind that the Verify timer, vt#, is specified in hours; the other two timers are specified in minutes.

Examples

ARCCONF SETPOWER 1 STAYAWAKE DISABLE ARCCONF SETPOWER 1 SPINUP 4 4 ARCCONF SETPOWER 1 LD 2 POWEROFF 60 ARCCONF SETPOWER 1 LD 2 SLOWDOWN 20 POWEROFF 60 VERIFY 12

arcconf setpriority

Description

Changes a task's execution priority or a controller's global background task priority.

Syntax

ARCCONF SETPRIORITY <Controller#> [TASK ID] <New Priority> [current]

Parameters

Controller#

The controller number

Task ID

Task ID is the number of the task to be changed. Use arcconf getstatus to obtain the task ID. Omit this parameter to set the controller's global background task priority; that is, the execution priority for all tasks on the controller.

New Priority

LOW, MEDIUM, or HIGH.

Current (keyword)

Applies a global task priority change to running tasks. By default, a global priority change does not apply to running tasks.

Examples

ARCCONF SETPRIORITY 1 <task_id> HIGH ARCCONF SETPRIORITY 1 LOW CURRENT

arcconf setstate

Description

Changes the state of a physical device or logical device from its current state to the designated state.

Syntax

```
ARCCONF SETSTATE <Controller#> DEVICE <Channel#> <Device#> <State> [MAXCACHE]
[LOGICALDRIVE <LD#>[LD#] ... ] [noprompt]
ARCCONF SETSTATE <Controller#> LOGICALDRIVE <LD#> OPTIMAL [ADVANCED <option>]
[noprompt]
```



Parameters

Controller#

The controller number

Channel#

The channel number for the drive.

Device#

Device number for the device.

LD#

Logical drive number.

State

- HSP—Create a hot spare from a ready drive
- RDY—Remove a hot spare designation
- DDD—Force a drive offline (to Failed)

MAXCACHE

Optional keyword for maxCache devices only. Include if State is HSP or RDY, and the hot spare is for a maxCache device.

ADVANCED <option>

Optional keyword/option pair. Set option to Nocheck to force a logical drive to the Optimal state without performing a consistency check.

Noprompt:

No prompt for confirmation.

Examples

```
ARCCONF SETSTATE 1 DEVICE 0 0 HSP LOGICALDRIVE 1 2 3
ARCCONF SETSTATE 1 DEVICE 0 0 RDY LOGICALDRIVE 2
ARCCONF SETSTATE 1 LOGICALDRIVE 1 OPTIMAL ADVANCED nocheck
```

arcconf setstatsdatacollection

Description

Enables or disables statistics collection for a controller. To display the statistics, see *arcconf getlogs* on page 23.

Syntax

ARCCONF SETSTATSDATACOLLECTION <Controller#> Enable Disable

Parameters

Controller# The controller number

Enable

Turns statistics collection on.

Disable

Turns statistics collection off.



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Examples

ARCCONF SETSTATSDATACOLLECTION 1 ENABLE

arcconf setvmcredential

Description

Resets the Hypervisor login credentials for VMware Guest OSs.

Syntax

SETVMCREDENTIAL <Esxip> <Esxcimomport> <Esxuserid> <Esxpassword> [noprompt]

Parameters

Esxip Hypervisor IP address.

Esxcimomport Hypervisor CiMOM port number.

Esxuserid Hypervisor user name.

Esxpassword Hypervisor password.

Examples

ARCCONF SETVMCREDENTIAL 172.18.46.101 5989 root passwd

arcconf task

Description

Performs a task on a logical drive, physical drive, or maxCache logical device.

Syntax: General Usage

```
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>
```

Syntax: maxCache Usage

```
ARCCONF TASK
TASK START <Controller#> MAXCACHE COHERENCYCHECK [ONCE|ALWAYS]
TASK START <Controller#> MAXCACHE <VERIFY_FIX|VERIFY>
TASK STOP <Controller#> MAXCACHE
```

Parameters

Controller# The controller number



LogicalDrive#

Number of the logical drive in which the task is to be performed

- Logical drive options:
 - verify_fix (Verify with fix)—verifies the logical drive redundancy and repairs the drive if bad data is found.
 - verify—verifies the logical drive redundancy without repairing bad data.
 - clear—removes all data from the drive.
- Physical device options:
 - verify_fix—verifies the disk media and repairs the disk if bad data is found.
 - verify-verifies the disk media without repairing bad data.
 - clear-removes all data from the drive.
 - initialize—returns a drive to the READY state (erases the metadata).
 - secureerase [password]—removes all data from the drive in a secure fashion to prevent any possible recovery of the erased data. See *arcconf atapassword* on page 17 for details about setting the password.

MAXCACHE options:

- coherencycheck—compares valid pages of the maxCache Container with their corresponding logical drive storage. Once is the default.
- verify_fix (Verify with fix)—verifies the maxCache Container redundancy and repairs the logical drive
 if bad data is found.
- verify—verifies the maxCache Container redundancy without repairing bad data.

Examples

ARCCONF TASK START 1 LOGICALDRIVE 1 VERIFY ARCCONF TASK START 1 DEVICE 0 0 INITIALIZE ARCCONF TASK START MAXCACHE COHERENCYCHECK ONCE

arcconf uninit

Description

Uninitializes one or more physical drives so that they can be used in HBA mode. The uninitialize command clears Adaptec meta-data and any OS partitions from a drive. Drives can uninitialized only if they are in the Raw or Ready state (that is, not part of any logical drive). A drive in the Raw state has no Adaptec meta-data but may or may not have an OS partition.

Note: For more information about HBA mode, see *arcconf setcontrollermode* on page 35.

Syntax:

ARCCONF UNINIT <Controller#> <CHANNEL# DRIVE#> [Channel# Drive#] ... [nologs] ARCCONF UNINIT <Controller#> ALL [nologs]

Parameters

Controller#

Controller number.

Channel#

The channel number of the device to be uninitialized.

Drive#

The drive number of the device to be uninitialized.



ALL

Uninitializes all physical devices in the Raw or Ready state.

nologs

Suppresses log output for the command.

Examples

ARCCONF UNINIT 1 0 12 0 13 ARCCONF 1 ALL



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