

User's Guide
Microsemi Adaptec RAID Controller Command Line
Utility

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Revision History

Issue	Issue Date	Details of Change
1	April 2016	Add new commands; TASK uninit ALL; new GETCONFIG component properties; Logical Drive, HDD, and Backup System Status and Error Conditions.

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1 Getting Started with the Command Line Utility

This chapter explains how your Microsemi® Adaptec® 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

1.1 Installing the Command Line Utility

You can install ARCCONF with the Microsemi Adaptec maxView Storage Manager application. If you prefer to install just the command line utility, without installing the maxView Storage Manager GUI, you can install just the ARCCONF executable for your operating system.

Follow the instructions in this section to install ARCCONF on the supported operating systems with maxView Storage Manager. (For more information about maxView Storage Manager, see the *maxView Storage Manager User's Guide*.)

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 [Downloading the Installation Packages](#) on page 11 and [Installing on FreeBSD](#) on page 13.

1.1.1 Downloading the Installation Packages

Complete these steps to download the 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. Select your RAID controller family (Series 7, Series 8, and so on) and controller model.
3. Select **Storage Manager Downloads**, then select the appropriate installer package from the list; for instance, maxView Storage Manager for Windows x64 or maxView Storage Manager for Linux.

Note: To install ARCCONF without the GUI, select **Adaptec ARCCONF Command Line Utility** from the list of installers. This package includes the ARCCONF executable for Windows, Linux, Solaris, and FreeBSD.

4. Click **Download Now** and accept the license agreement.
5. When the download completes, extract the contents of the installer archive file to a temporary location. If the archive includes installers for multiple operating system versions (VMware, for instance), each installer is stored in a separate folder, including one each for 32-bit and 64-bit operating systems.

Note: If you are installing maxView Storage Manager and ARCCONF on a different machine—for instance, you downloaded the Linux installer onto a Windows machine—copy the installer from the download location to a temporary location on the target machine. Use whatever method you prefer to copy the file: USB flash drive; network transfer; Telnet/SSH; whatever is most convenient.

6. Continue with the installation instructions for your operating system.

1.1.2 Installing on Windows

To install ARCCONF on Windows systems:

1. Open Windows Explorer or My Computer, then change to the directory where the Windows setup program is located (see [Downloading the Installation Packages](#) on page 11 for details).

2. Double-click the setup program for your operating system version:

Options	Description
Windows 64-bit	setup_asm_x64.exe

The Installation wizard opens.

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.
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**, **Agent**, and **CLI Tools**. Then click **Next**.
7. Follow the on-screen instructions to complete the installation.

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

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

1. In a shell window, change to the directory where the Linux installer package is located (see [Downloading the Installer Package](#) on page 11 for details).

2. Run the .bin file for your operating system version:

Options	Description
Linux 64-bit	./StorMan-2.01.x86_64.bin

3. When prompted for configuration details, enter the following:
 Enter the CIM Server HTTP Port: [default:5988]
 When the installation completes a confirmation message is displayed.

1.1.4 Installing on Debian or Ubuntu Linux

To install ARCCONF on Debian or Ubuntu Linux:

1. In a shell window, change to the directory where the Debian or Ubuntu installer package is located (see [Downloading the Installation Packages](#) on page 11 for details).

2. Install the .deb package for your operating system version (where xxxxx=build number):

Options	Description
Linux 64-bit	dpkg -i StorMan-2.01-XXXXX_amd64.deb

3. Enter the following configuration details:
 Enter the CIM Server HTTP Port: [default:5988].
 When the installation completes a confirmation message is displayed.

1.1.5 Installing on Solaris

To install ARCCONF on Solaris:

1. On the Solaris machine, change to the directory where the Solaris installer package is located (see [Downloading the Installer Package](#) on page 11 for details).
2. Install maxView Storage Manager:

```
pkgadd -d StorMan.pkg
```

3. At the prompt to continue, select `y`, then press `Enter`.
4. 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.

1.1.6 Installing on FreeBSD

To install ARCCONF on FreeBSD:

1. Copy the `arccconf` executable from the original download location to your FreeBSD system (see [Downloading the Installer Package](#) on page 11 for details).
2. Verify that the file has 'execute' privilege.

1.1.7 Installing on VMware

Use the following procedure to install the `.vib` files for VMware ESXi 5.5 or VMware ESXi 6.0. Perform the installation from a remote system running a Telnet/SSH client. Use a terminal emulator to access the ESXi server remotely.

1. Copy the following files from the installer download location to the `/tmp` directory on your local ESXi server (see [Downloading the Installation Packages](#) on page 11 for details):
 - `vmware-esx-provider-arccconf.vib`
 - `vmware-esx-provider-arcsmis.vib`

The `arccconf.vib` is for command line communication.

The `arcsmis.vib` is for remote management communication.

2. Check for existing installation of `arccconf`.


```
esxcli software vib list | grep arccconf
```
3. Remove the existing `arccconf` package.


```
esxcli software vib remove -n arccconf
```

 When the package is removed, you receive the message "Reboot Required: false."
4. Check for an existing installation of `arc-cim-provider`.


```
esxcli software vib list | grep arc-cim-provider
```
5. Remove the existing `arc-cim-provider` package.


```
esxcli software vib remove -n arc-cim-provider
```

 When the package is removed, you receive the message "Reboot Required: true."
6. Set the installation acceptance level to either `PartnerSupported` or `CommunitySupported`:


```
esxcli software acceptance set --level=PartnerSupported
```
7. Install the `arccconf` package.


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

 When the package is installed, you receive the message "Reboot Required: false."
8. Install the `arc-cim-provider` package.


```
esxcli software vib install --no-sig-check -v /tmp/vmware-esx-provider-arc-cim-provider.vib
```

 When the package is installed, you receive the message "Reboot Required: true."
9. Reboot the system.
10. Continue the installation with [Installing on a Guest Operating System](#) on page 14.

1.1.8 Installing on Citrix XenServer

Use the following procedure to install the maxView Storage Manager support package on a Citrix XenServer host. This package installs and configures all the components necessary to run maxView Storage Manager and ARCCONF from a XenServer guest operating system.

Note: Before installing the maxView support package on the XenServer host, you *must* install the XenServer Integration Suite Supplemental Pack. Do not continue until you complete this task. See your XenServer installation guide for details.

1. Copy the XenServer module rpm from the installer download location to your XenServer /tmp directory (see [Downloading the Installer Package](#) on page 11 for details).
2. Install the rpm package for your operating system version (xxxxx=build number).

Options	Description
---------	-------------

XenServer 64-bit	rpm -i StorMan-2.01-XXXXX_amd64.rpm
-------------------------	-------------------------------------

3. Continue with [Installing on a Guest Operating System](#) on page 14.

1.1.9 Installing on a Guest Operating System

This section describes how to install ARCCONF on a VMware or Citrix XenServer guest operating system.

1.1.9.1 Installing on a Windows Guest OS

To install ARCCONF on a Windows Guest OS running on VMware or Citrix XenServer:

1. On the VMware or XenServer guest OS, change to the directory where the Guest OS installer package is located (see [Downloading the Installer Package](#) on page 11 for details).
2. Double-click the setup program for your operating system:

Options	Description
---------	-------------

Windows GOS 64-bit	setup_maxview_gos_x64.exe
---------------------------	---------------------------

The Installation wizard opens.

3. Choose the hypervisor type (ESXi Server or XenServer), then click **Next**.
4. Enter the following configuration details:
 - a) Host IP Address (ESXi or XenServer host)
 - b) Web Server Port: 8443
 - c) Host user name (default: root)
 - d) Operating system password/password confirmation
5. Click **Next**, then click **Install**.

When the installation is complete you receive a confirmation message.

1.1.9.2 Installing on a Linux Guest OS

To install ARCCONF on a Linux Guest OS running on VMware or Citrix XenServer:

1. On the VMware or XenServer Guest OS, change to the directory where the Linux installer package is located (see [Downloading the Installer Package](#) on page 11 for details).
2. Run the installer for your operating system version.

Options	Description
---------	-------------

Linux GOS 64-bit	./Storman-1.06.GOS86_64.bin
-------------------------	-----------------------------

3. At the prompt, choose the GOS type. Enter 1 for ESXi, 2 for XenServer:
Select the GOS Type. 1.ESXi Server 2.XenServer:
4. Enter the following configuration details:
Hypervisor IP address

Hypervisor username [default: root]
Hypervisor password
Event Listener Port [default: 65500]

When the installation is complete you receive a confirmation message.

1.2 Starting the Command Line Utility

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

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

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

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.

2.1 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	getlogs	resetstatisticscounters	setname
backupunit	getperform	romupdate	setncq
consistencycheck	getsmartstats	saveconfig	setperform
copyback	getstatus	savesupportarchive	setphy
cpld	getversion	seeprom	setpower
create	identify	setalarm	setpriority
delete	imageupdate	setbiosparams	setstate
driverupdate	key	setboot	setstatsdatacollection
errortunable	list	setcache	setvmcredential
expanderlist	modify	setconfig	task
expanderupgrade	phyerrorlog	setconnectormode	uninit
failover	playconfig	setcontrollermode	verifywrite
getconfig	preserveconfig	setcustommode	
getexception	rescan	setmaxcache	

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

2.2 **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

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
```

2.3 **arcconf backupunit**

Description

Resets the hard error flag on the AFM-700 Flash Backup module, and erases the lifetime calculation records. A hard error disables the backup module *permanently*, across power cycles, until the hard error flag is cleared. The error flag is set when any of the following events occur:

- Initialization failure
- Backup failure due to an uncorrectable ECC error
- Backup failure due to a lack of good blocks in the AFM Flash
- Backup failure due to bad meta-data
- Backup failure due to a hardware failure
- Restore failure due to an uncorrectable ECC error
- Restore failure due to a DMA timeout
- Restore failure due to a hardware failure
- AFM Flash erase failure of the meta-data
- AFM Flash erase failure due to a hardware failure

Note: A reboot is necessary for change to take effect.

Syntax

```
ARCCONF BACKUPUNIT <Controller#> reset
```

Parameters

Controller#

The controller number.

Examples

```
ARCCONF BACKUPUNIT 1 reset
```

2.4 arccnf consistencycheck

Description

Toggles the background consistency check modes of the controller.

Syntax

```
ARCCONF CONSISTENCYCHECK <Controller#> <on [Delay]|off|period <DAYS>> [noprompt]
```

Parameters

Controller#

Controller number.

On [Delay]

Turns background consistency check on, with optional 1-30 second delay period. The delay period sets the controller idle time, after which the consistency check will start. A value of 0 disables the consistency check (effectively, the same as setting the parameter to Off). If Delay is unspecified, the consistency check mode is set to HIGH. If Delay is specified, the consistency check mode is set to IDLE, for specified period.

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 automatically turns background consistency check on.

Noprompt

Optional parameter that suppresses the confirmation prompt.

Examples

```
ARCCONF CONSISTENCYCHECK 1 PERIOD 30
ARCCONF CONSISTENCYCHECK 1 ON 20
ARCCONF CONSISTENCYCHECK 1 OFF
```

2.5 arccnf 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
```

2.6 arcconf cpld

Description

Updates the CPLD image from flash.

Syntax

```
ARCCONF CPLD <Controller#> FLASHUPDATE [noprompt] [nologs]
ARCCONF CPLD <Controller#> FORCERELOAD [noprompt] [nologs]
```

Parameters

Controller#

The controller number.

FLASHUPDATE

Updates the CPLD image from flash.

FORCERELOAD

Forces the CPLD image to reload.

Noprompt

Optional parameter that suppresses confirmation prompt.

Nologs

Optional parameter that suppresses logging of warning/error messages.

Examples

```
ARCCONF CPLD 1 FLASHUPDATE
```

2.7 arcconf create

Description

Creates a new logical drive, maxCache Device, 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, maxCache

Indicates a logical drive or maxCache Device, 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).
- LDcache—Sets the cache state for the logical drive:
 - LON - cache on
 - LOFF - cache off
- VerifyWithOS <True | False>—(*Windows only*) Wait for logical devices to be exposed to Windows OS:
 - True - wait for the logical device to be exposed to the OS
 - False - do not wait for the logical device to be exposed to the OS
- 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 [arccnf setmaxcache](#) on page 47.

Size

Indicates the size of the logical drive in megabytes. Use MAX to set size to available space. Use MAXMBR to set the size to 2TB.

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 Device. 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. RAID levels 0, 1, and 5 are supported for RVOLUME members. All RVOLUME members must be the same RAID level.

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
```

2.8 arccnf 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 <LD#> <LD#> ... | ALL
[PRESERVEPARTITION] [noprompt] [nologs]
ARCCONF DELETE <Controller#> JBOD <CHANNEL# DRIVE#> [CHANNEL# DRIVE#] ...
[nologs]
ARCCONF DELETE <Controller#> JBOD ALL [noprompt]
ARCCONF DELETE <Controller#> MAXCACHE
```

Parameters

Controller#

Controller# is the controller number

LD#

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

PRESERVEPARTITION

Deletes logical drives without partitions. Applicable ONLY for ALL or multiple LD#.

LogicalDrive|JBOD ALL

Deletes all logical drives or JBODs.

MAXCACHE

Deletes the maxCache Device.

Noprompt

Optional parameter that suppresses alert messages.

Examples

```
ARCCONF DELETE 1 LOGICALDRIVE 1 2 3
ARCCONF DELETE 1 LOGICALDRIVE 0 1 PRESERVEPARTITION
ARCCONF DELETE 1 JBOD ALL
```

2.9 arcconf 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
```

2.10 arcconf errortunable

Description

Sets the tunable error profile for the controller. Contact Microsemi Adaptec Support for more information about using this command to set up a tunable error profile.

Syntax

```
ARCCONF ERRORTUNABLE <Controller#> SETPROFILE <Profile#>
ARCCONF ERRORTUNABLE <Controller#> GETPARAMS [Profile#] [SAVE [filename]]
[noprompt]
ARCCONF ERRORTUNABLE <Controller#> CONFIGPARAMS FILE [filename]
ARCCONF ERRORTUNABLE <Controller#> CONFIGPARAMS <Param1> <Value1> [Param2]
[Value2] ...
```

Parameters

Controller#

Controller number

GETPARAMS

Returns the parameters for the current profile on the controller.

Profile#

Profile number:

1. Aggressive
2. Normal
3. Relaxed

PARAM/VALUE...

A list of param/value pairs:

- MAX_ALLOWED_CRC_ERROR_COUNT
- CRC_ERROR_DURATION_SEC
- MAX_ALLOWED_NOT_READY_COUNT
- MAX_ALLOWED_SEL_TIMEOUT_COUNT
- MAX_ALLOWED_ASYNC_FREEZE_COUNT
- ASYNC_FREEZE_DURATION_SEC
- NEXUS_BUSY_DURATION_SEC
- MAX_IO_TIMEOUT_SEC
- PER_ITERATION_IO_TIMEOUT_SEC
- MAX_RETRY_COUNT
- ALLOW_BBR_ON_WRITE_FAILURE
- MAX_ALLOWED_MEDIUM_ERROR_COUNT
- MEDIUM_ERROR_DURATION_SEC

SAVE and FILE <File name>

Path to tunable parameter definition file. The default filename is `ErrorTunableParams.cfg`.

Examples

```
ARCCONF ERRORTUNABLE 1 SETPROFILE 1
ARCCONF ERRORTUNABLE 1 GETPARAMS 2 SAVE C:\abc.cfg
ARCCONF ERRORTUNABLE 1 CONFIGPARAMS FILE C:\abc.cfg
ARCCONF ERRORTUNABLE 1 CONFIGPARAMS CRC_ERROR_DURATION_SEC 10
```

2.11 arccnf expanderlist

Description

Returns a list of disk drive expanders on a controller.

Syntax

```
ARCCONF EXPANDERLIST <Controller#>
```


Parameters

Controller#

Controller number.

Examples

```
ARCCONF EXPANDERLIST 1
```

2.12 arcconf expanderupgrade

Description

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

Note: Some controllers do not support this operation.

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 Microsemi 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

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

2.13 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
```

2.14 arcconf getconfig

Description

Lists information about controllers, logical devices, physical drives, and flash backup systems, including:

- Controller type, status, World Wide Name (WWN), and mode
- Cache preservation status: enabled/disabled, % of cache pages preserved
- BIOS, boot block, device driver, and firmware versions
- Logical drive status, RAID level and size
- Logical drive mount points
- RAID 10 segment and group information
- maxCache status, fetch and flush rate policy, read/write balance, SSD information
- Device type, device ID, presence of PFA
- Physical device state, mount point (for drives with OS partition)
- Enclosure information: fan, power supply, and temperature status
- SGPIO virtual SEP information (virtual enclosure device for SGPIO backplanes)
- Flash backup information (for AFM-700 flash backup module): status, charge level, temperature readings, max voltage, current, estimated life, errors, and serial number
- Connector/Lane/Phy mapping

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

For more information, see [getconfig Output Summary](#) on page 59.

Syntax

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

Parameters

Controller#

Controller number

LD#

Display information about the specified logical device

AD/PD/AL...

- AD—Adapter information only
- LD—Logical drive information only
- PD—Physical device information only
- MC—maxCache 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 LD 0
ARCCONF GETCONFIG 1 CN
```

2.15 arconf getexception

Description

Prints the exception (errors/warnings) on the controller.

Syntax

```
ARCCONF GETEXCEPTION <Controller#> [ AD | LD | PD | AL] [on/off][nologs]
```

Parameters

Controller#

The controller number.

On/Off

Turns warning exceptions on and off.

AD/LD/PD/AL

- AD—Controller exceptions only
- LD—Logical drive exceptions only
- PD—Physical drive exceptions only
- AL—All exceptions

Examples

```
ARCCONF GETEXCEPTION 1 PD
ARCCONF GETEXCEPTION 1 AL
ARCCONF GETEXCEPTION 1 off
```

2.16 arccnf 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 (rebuilt, LDMS, etc.)
- 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 cache statistics for one or all logical drives
- 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#> <Type3> LOGICALDRIVE [<LD#>|ALL] [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

Type3

One of the following:

- CACHE—cache statistics data for all or a single logical drive

Type4

One of the following:

1. Green Backup
2. Cache Memory
3. 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 GETLOGS 1 CACHE LOGICALDRIVE 0
```

2.17 **arccnf 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
```

2.18 **arccnf 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
```

2.19 **arccnf 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 and logical drive size (for a logical device), channel ID/device ID (for a physical drive), and percentage of the operation completed.

Note:

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

Syntax

```
ARCCONF GETSTATUS <Controller#> [nologs]
```

Parameters

Controller#

Controller# is the controller number

Examples

```
ARCCONF GETSTATUS 1
```

2.20 arconf 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
ARCCONF GETVERSION <Controller#>
```

Parameters

Controller#

Controller# is the controller number

Examples

```
ARCCONF GETVERSION
ARCCONF GETVERSION 1
```

2.21 arconf identify

Description

Identifies a physical device, logical device, or maxCache device by blinking its LEDs.

Syntax

```
ARCCONF IDENTIFY <Controller#> LOGICALDRIVE <LogicalDrive#> [START|STOP]
[nologs]
ARCCONF IDENTIFY <Controller#> DEVICE <Channel# ID#> ... [START|STOP] [nologs]
ARCCONF IDENTIFY <Controller#> MAXCACHE [START|STOP] [nologs]
```

Parameters

Controller#

Controller number

LogicalDrive#

Number of the logical drive to be identified

Channel# ID#

Channel number and ID number for the physical device(s) to be identified

START

Starts blinking the device until the STOP command is issued

STOP

Stops blinking the device

Examples

```
ARCCONF IDENTIFY 1 DEVICE 0 0
ARCCONF IDENTIFY 1 DEVICE 0 1 START
ARCCONF IDENTIFY 1 DEVICE 0 1 STOP
ARCCONF IDENTIFY 1 MAXCACHE START
```

2.22 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
```

2.23 **arccnf key**

Description

Loads a feature key onto a Microsemi Adaptec controller.

Syntax

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

Parameters

Controller#

The controller number.

Key#

The key number provided by Microsemi.

Examples

```
ARCCONF KEY 1 SET ABCDEFGHIJKLMNOPQRSTUVWXYZ
```

2.24 **arccnf 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
```

2.25 **arcconf modify**

Description

Morphs a logical device from one raid level to another (RAID Level Migration). Expands a logical device from original size to one with larger capacity (Online Capacity Expansion).

Syntax

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

Parameters

Controller#

The controller number

LogicalDrive#

The logical drive number to be modified

Options

One of the following:

- **Stripesize <size>**—indicates the stripe size in KB. Options are 16, 32, 64, 128, 256, 512, and 1024. the default is 256KB.
- **Init_priority <priority>**—is the priority level of the modification. Options are low, med, and high.
- **Legs <leg>**— is the number of sub-arrays 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

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

RAID#

RAID level for the logical drive: 0, 1, 10, 5, 6, 50, 60, and simple_volume.

Channel# ID#

Channel number and device ID for the device

Note: The CHANNEL# and ID# parameters are the list of devices that will contain the target modification object. Channel and ID are repeatable parameters. For RAID 1 to Simple Volume migration, CHANNEL# and ID# parameters are ignored.

noprompt

Suppresses the user prompt

Examples

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

2.26 **arcconf phyerrorlog**

Description

Displays PHY error logs for physical devices on a controller or expander PHYs.

Syntax

```
ARCCONF PHYERRORLOG <Controller#> DEVICE <Channel# ID#>
ARCCONF PHYERRORLOG <Controller#> DEVICE ALL
ARCCONF PHYERRORLOG <Controller#> EXPANDER <ExpanderID#> <PHY#>
ARCCONF PHYERRORLOG <Controller#> EXPANDER <ExpanderID#> ALL
```

Parameters

Controller#

Controller number.

Channel/ID

Channel and number of the physical device on the controller.

ExpanderID#

Expander identifier.

PHY#

PHY identifier.

ALL

Displays PHY error log for all physical devices or expander PHYs.

Examples

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

2.27 arccnf playconfig

Description

Configures a controller using a XML server template file produced by the SAVECONFIG command (see [arccnf saveconfig](#) on page 39). 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] [SLOTID]
```

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.

SLOTID

Apply the configuration based on Slot ID instead of Device ID.

Examples

```
ARCCONF PLAYCONFIG server1_config.xml playconfig.log FORCE ALL
```

2.28 arccnf preservcache

Description

Toggles the controller's cache preservation policy; clears the preserved cache for one or more logical drives; and lists the logical drives with cache preservation enabled.

This command preserves the controller's DDR cache to prevent data loss in the event of a power failure or unsafe shutdown. "Dirty pages" (data that have not been committed to disk) are restored to the cache when power is restored and the logical drives on the controller are back online. Once the preserved cache is restored, the controller flushes the data to disk using its normal scheduling mechanism. You can clear the preserved dirty cache for one or more logical drives if you expect a failed enclosure or logical drive to remain offline.

Note: You cannot enable maxCache read and/or write caching on a controller with cache preservation enabled. The following operations are not permitted on a controller in the Cache Preserved state:

- Creating a logical drive
- Changing the Performance mode
- Running a consistency check
- Changing the RAID Level of a logical drive
- Forcing a logical drive online or offline
- Changing the cache page size

Syntax

```
ARCCONF PRESERVECACHE <Controller#> <ENABLE|DISABLE>
ARCCONF PRESERVECACHE <Controller#> CLEAR LOGICALDRIVE <LD#|ALL> [noprompt]
ARCCONF PRESERVECACHE LD [LD#]
```

Parameters

Controller#

Controller number.

LD#

The logical drive number. Use ALL to clear preserved dirty cache for all logical drives on the controller.

noprompt

No prompt for confirmation.

Examples

```
ARCCONF PRESERVECACHE 1 ENABLE
ARCCONF PRESERVECACHE 1 CLEAR LOGICALDRIVE ALL
ARCCONF PRESERVECACHE 1 LD 1
```

2.29 **arccconf 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. 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. Rescan status can be obtained with ARCCONF getstatus; see [arccconf getstatus](#) on page 30 for more information.

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
```

2.30 **arccconf 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
```

2.31 **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 on all OSs that support maxView Storage Manager.
2. You can download the .ufi update files from the Support area at www.adaptec.com.

Syntax

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

Parameters

Controller#

The controller number.

BaseName

Absolute path to the controller image update 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.UFI
```

```
ARCCONF ROMUPDATE 1 C:\firmwareImage\as483c.bin newversion 12345 force noprompt
```

2.32 **arccnf saveconfig**

Description

Note: This command is supported on all OSs that support maxView Storage Manager.

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 [arccnf playconfig](#) on page 35 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
```

2.33 **arcconf savesupportarchive**

Description

Saves configuration and status information to help Adaptec Customer Support 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. (For more information about SMART statistics, see [arcconf getsmartstats](#) on page 30.)

By default, 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 [Path]
[Firmware|GUI|CIM|Arcconf|Storlib|Agent|Basecode]
```

Parameters

Path

Path to store the log files.

Log type:

One of these log files:

- Firmware: saves Firmware logs
- GUI: saves GUI logs
- CIM: saves CIM logs
- Arcconf: saves Arcconf logs
- Storlib: saves StorLib logs
- Agent: saves Agent logs
- Basecode: saves basecode logs

Examples

```
ARCCONF SAVESUPPORTARCHIVE
ARCCONF SAVESUPPORTARCHIVE Firmware
ARCCONF SAVESUPPORTARCHIVE /var/log/maxView Storlib
```

2.34 **arcconf seeeprom**

Description

Updates the SEEPROM on the controller.

Syntax:

```
ARCCONF SEEPROM <Controller#> UPDATE [noprompt] [nologs]
```

Parameters

Controller#

Controller number.

Noprompt

Optional parameter that suppresses the confirmation message.

Nologs

Optional parameter that suppresses log output.

Examples

```
ARCCONF SEEPROM 1 UPDATE
```

2.35 **arccconf 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
```

2.36 **arccconf setbiosparams**

Description

Changes select BIOS settings, including:

- Array BBS support (BIOS Boot Specification)
- Runtime BIOS mode
- Drives displayed on POST
- Backplane mode
- Missing drive count

The command sub-functions are mutually exclusive; you can set only one option at a time.

Syntax

```
ARCCONF SETBIOSPARAMS <Controller#> RUNTIMEBIOS [enable | disable]
ARCCONF SETBIOSPARAMS <Controller#> ARRAYBSSUPPORT [enable | disable]
ARCCONF SETBIOSPARAMS <Controller#> DISPLAYEDONPOST [enable | disable]
ARCCONF SETBIOSPARAMS <Controller#> BACKPLANEMODE <mode>
ARCCONF SETBIOSPARAMS <Controller#> BIOSHALTONMISSINGDRIVECOUNT <count>
```

Parameters

Controller#

Controller number

Subfunction

Option	Description
RUNTIMEBIOS [enable disable]	When enabled, allows the controller to act as a bootable device. When disabled, allows another controller to act as a bootable device. Default is enable .
ARRAYBSSUPPORT [enable disable]	When enabled in systems that support BBS, the controller presents attached bootable devices up to the BIOS for boot device selection. Default is disable .
DISPLAYEDONPOST [enable disable]	When enabled, connected disk drives are displayed during system Power On Self Test (POST). Displaying the disk drives adds a few seconds to the overall POST time. Default is disable .
BACKPLANEMODE <mode>	Sets the backplane mode to 0-IBPI, 1-SGPIO, or 3-Disabled. Default is IBPI .
BIOSHALTONMISSINGDRIVECOUNT <count>	The number of missing drives during POST. If => "count", halt. Count can have a value between 1-255; default is 8.

Examples

```
ARCCONF SETBIOSPARAMS 1 RUNTIMEBIOS disable
ARCCONF SETBIOSPARAMS 1 BACKPLANEMODE 1
ARCCONF SETBIOSPARAMS 1 BIOSHALTONMISSINGDRIVECOUNT 5
ARCCONF SETBIOSPARAMS 1 ARRAYBSSUPPORT enable
```

2.37 arconf 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#> LOGICALDRIVE <LogicalDrive#> [TYPE <Boot Type>]
[nologs]
ARCCONF SETBOOT <Controller#> DEVICE <Channel# ID#> TYPE <Boot Type> [nologs]
ARCCONF SETBOOT <Controller#> ENABLE
```

Parameters

Controller#

Controller number

LogicalDrive#

Logical drive number to mark as the boot device

Channel# ID#

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

TYPE <Boot Type>

Boot type of the logical or physical device:

- Primary - Primary boot logical/physical device
- Secondary - Secondary boot logical/physical device
- None - Non-bootable

ENABLE

Sets the controller as a boot controller

Examples

```
ARCCONF SETBOOT 1 LOGICALDRIVE 0 TYPE primary
ARCCONF SETBOOT 1 DEVICE 0 5 TYPE secondary
ARCCONF SETBOOT 1 ENABLE
```

2.38 arccnf setcache**Description**

Changes the cache mode for a logical drive, or the write cache mode for all drives or a single physical drive on a controller.

Syntax

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

Physical mode

- WT - write through disabled
- WB - write back enabled

Policy

- Enable - write back for all physical drives
- Disable - write through for all physical drives
- drivespecific - set policy for individual physical drives

Examples

```
ARCCONF SETCACHE 1 LOGICALDRIVE 1 RON
ARCCONF SETCACHE 1 DEVICE 0 0 WB
ARCCONF SETCACHE 1 DEVICEALL Enable
```

2.39 **arcconf setconfig**

Description

Resets the controller configuration. Logical drives are deleted, hard disks are reset to the READY state, cache contents are lost, and 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
```

2.40 **arcconf setconnectormode**

Description

Sets the connector operating mode to one of the following:

- RAID: Expose RAW (default)—All RAID functions of the controller are enabled. Attached drives without Microsemi Adaptec meta-data are surfaced to the host operating system as RAW Pass Through devices (similar to JBODs on legacy Adaptec controllers).
- HBA Mode—Allows the controller to act and be used as a Host Bus Adapter. RAID functions of the controller are disabled. All attached drives are surfaced as RAW devices.

Note:

1. Changing into HBA mode is allowed only if there are no drives with Microsemi Adaptec meta-data attached to the controller. Uninitialize the drives before changing to HBA mode (see [arcconf uninit](#) on page 57). Uninitialized drives are also compatible with any HBA and can be exchanged with drives on the motherboard's SATA interface.
2. Before you can change to HBA mode, you must delete existing hot spare drives (if any).

3. In HBA mode, a hot-plugged drive is automatically configured as a RAW device. When a RAW device is pulled from the system, the controller does not delete the internal data structures associated with the drive. However, the missing RAW device is not remembered across re-scans.

Note: Use `arcconf setcontrollermode` to change the operating mode of *all* ports on the controller.

Syntax:

```
ARCCONF SETCONNECTORMODE <Controller#> <Connector #> <Functional Mode#>
<Connector#> <Functional Mode#> ... [noprompt] [nologs]
```

Parameters

Controller#

Controller number.

Connector#

Connector number.

Functional Mode#

One of the following values:

- 0 - RAID: Expose RAW
- 1 - HBA Mode

nologs

Suppresses log output for the command.

Examples

```
ARCCONF SETCONNECTORMODE 1 1 1
ARCCONF SETCONNECTORMODE 1 1 0
```

2.41 arcconf setcontrollermode

Description

Sets the controller operating mode to any of the following:

- RAID: Expose RAW (default)—All RAID functions of the controller are enabled. Attached drives without Microsemi Adaptec meta-data are surfaced to the host operating system as RAW Pass Through devices (similar to JBODs on legacy Adaptec controllers).
- Auto Volume Mode—Attached drives without Microsemi Adaptec meta-data, but with an OS partition, are surfaced to the host operating system as RAW devices, where the RAID layer of the controller firmware is bypassed when the host issues commands to the device. Attached drives without Microsemi Adaptec meta-data and without OS partitions, are automatically configured as Simple Volumes (single drives with Microsemi 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.
 - Caching for non-rotating media is disabled.

In Auto Volume Mode, you can create up to a maximum of 128 Simple Volumes; no other RAID types are supported.

Note: Before you can change to Auto Volume mode, you must delete redundant RAID arrays, maxCache Devices, and hot spare drives (if any).

Auto-Volume Mode enables DRAM caching on rotating media to help reduce latency and accelerate performance, especially if combined with a custom performance mode, such as Big Block Bypass (see [arccnf setperform](#) on page 50 for more information).

- **HBA Mode**—The intent of this mode is to allow the RAID controller to act and be used as a Host Bus Adapter. All attached drives are surfaced as RAW devices. Changing into HBA mode is allowed only if there are no drives with Microsemi Adaptec meta-data attached to the controller. Uninitialize the drives before changing to HBA mode (see [arccnf uninit](#) on page 57). Uninitialized drives are also compatible with any HBA and can be exchanged with drives on the motherboard's SATA interface.

Note:

1. Before you can change to HBA mode, you must delete existing hot spare drives (if any).
 2. In HBA mode, a hot-plugged drive is automatically configured as a RAW device. 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.
- **RAID: Hide RAW**—All RAID functions of the controller are enabled, but RAW devices are not exposed to the operating system.
 - **Simple Volume Mode**—Allows you to create Simple Volumes only, up to a maximum of 128 volumes; no other RAID types are supported.

Note: Before you can change to Simple Volume mode, you must delete existing RAID arrays, maxCache Devices, and hot spare drives (if any).

Syntax:

```
ARCCNF SETCONTROLLERMODE <Controller#> <Controller Mode> [nologs]
```

Parameters

Controller#

Controller number.

Controller Mode

One of the following values:

- 0 - RAID: Expose RAW
- 1 - Auto Volume Mode
- 2 - HBA Mode
- 3 - RAID: Hide RAW
- 4 - Simple Volume Mode

nologs

Suppresses log output for the command.

Examples

```
ARCCNF SETCONTROLLERMODE 1 2
ARCCNF SETCONTROLLERMODE 1 0
ARCCNF SETCONTROLLERMODE 1 4
```

2.42 arccnf setcustommode

Description

Sets the parameters for a user-defined performance mode. Contact Microsemi Adaptec Support for more information about using this command to set up a custom performance mode. See also [arccnf setperform](#) on page 50.

Syntax

```
ARCCONF SETCUSTOMMODE <Controller#> ENABLE <Flag1> [Flag2 ... ] [DISABLE Flag1
Flag2 ...] [PARAMS <Field1 Value1> [Field2 Value2] ..] [nologs]
ARCCONF SETCUSTOMMODE <Controller#> DISABLE <Flag1> [Flag2 ... ] [nologs]
ARCCONF SETCUSTOMMODE <Controller#> PARAMS <Field1 Value1> [Field2 Value2] ..
[nologs]
ARCCONF SETCUSTOMMODE <Controller#> FILE [File name] [nologs]
```

Parameters

Controller#

Controller number

ENABLE <Flag>, DISABLE <Flag>

A list of flags to enable or disable:

- REPPREFET (CACHE_REPRESSPREFETCHING)
- IOSORT (CACHE_IO_SORTING)
- INSLRU (CACHE_INSERT_LRU)
- DYNSHARE (CACHE_DYNAMIC_SHARING)
- RLOADBYPASS (CACHE_READ_LOAD_BYPASS_VALID)
- WLOADBYPASS (CACHE_WRITE_LOAD_BYPASS_VALID)
- WRITEBYPASS (CACHE_LARGE_WRITE_BYPASS)
- IOCOAL (IO_COALESCING)

PARAMS

A list of field/value pairs:

- MAXDIRTY (CACHE_MAX_DIRTY)
- DMDFLUSHTHR (CACHE_DEMAND_FLUSH_THRESHOLD)
- PAGESIZE (CACHE_PAGE_SIZE)
- RFINACTIVE (CACHE_RESERVED_FOR_INACTIVE)
- ADDWRITES (CACHE_ADDITIONAL_WRITES)
- MINFLUSHSTRIPE (CACHE_MIN_FLUSH_STRIPE)
- BYPASSWRIOSSIZE (CACHE_BYPASS_WRITE_IO_SIZE)
- IOLIMSASHDD (IO_LIMIT_SAS_HDD)
- IOLIMSASSSD (IO_LIMIT_SAS_SSD)
- IOLIMSATAHDD (IO_LIMIT_SATA_HDD)
- IOLIMSATASSD (IO_LIMIT_SATA_SSD)

FILE <File name>

Path to parameter definition file. The default parameter file is PerformanceMde.cfg.

Examples

```
ARCCONF SETCUSTOMMODE 1 ENABLE IOSORT DISABLE INSLRU
ARCCONF SETCUSTOMMODE 1 DISABLE REPPREFET
ARCCONF SETCUSTOMMODE 1 PARAMS PAGESIZE 3
ARCCONF SETCUSTOMMODE 1 FILE C:\Adaptec
```

2.43 arconf 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#> <ADDTOPPOOL|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.

Examples

```
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
```

2.44 arccnf 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

Examples

```
ARCCONF SETNAME 1 LOGICALDRIVE 1 BACKUP_A
```

2.45 arccnf 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
```

2.46 **arccnf 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. See arccnf setcustommode on page 46.

Examples

```
ARCCONF SETPERFORM 1 2
ARCCONF SETPERFORM 1 3
```

2.47 **arccnf setphy**

Description

Sets the maximum connection speed for SAS devices to 6Gb/s or 12Gb/s.

Syntax

```
ARCCONF SETPHY <Controller#> MAXSASPHYLINKRATE <MaxSASPhylinkrate#> [noprompt]
[nologs]
```

Parameters

Controller#

The controller number

MaxSASPhylinkrate#

The Phy link rate. Valid values are 6 and 12 (for 6Gb/s and 12Gb/s, respectively).

Noprompt

No prompt for confirmation.

Examples

```
ARCCONF SETPHY 1 MAXSASPHYLINKRATE 6
ARCCONF SETPHY 1 MAXSASPHYLINKRATE 12
```

2.48 arcconf setpower

Description

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

Syntax

```
ARCCONF SETPOWER <Controller#> Stayawake DISABLE | <starttime> <endtime> [DAYS] [nologs]
ARCCONF SETPOWER <Controller#> Spinup <internal#> <external#>
ARCCONF SETPOWER <Controller#> LD <LD#> <disable | [slowdown st#] | [poweroff pt#] |
[verify vt#]> [nologs]
```

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).

DAYS

Days of the week on which the stayawake period is enabled; default is all days.

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.

LD#

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
```

2.49 arccnf 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 `arccnf 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

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
```

2.50 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. Dedicates the HSP to one or more logical devices.
- RDY—Remove a hot spare designation. Attempts to change a drive from Failed to Ready. To remove a dedicated HSP from one or more logical devices, use the optional LOGICALDRIVE <LD#> <LD#> ... parameter.
- DDD—Force a drive offline (to Failed).
- EED—Enable the erased drive.

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.

Caution: Using Advanced options may result in data loss!

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

2.51 **arconf setstatsdatacollection**

Description

Enables or disables statistics collection for a controller. To display the statistics, see [arconf getlogs](#) on page 28 .

Syntax

```
ARCCONF SETSTATSDATACOLLECTION <Controller#> Enable|Disable
```

Parameters

Controller#

The controller number

Enable

Turns statistics collection on.

Disable

Turns statistics collection off.

Examples

```
ARCCONF SETSTATSDATACOLLECTION 1 ENABLE
```

2.52 **arconf 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
```

2.53 **arccnf smp**

Description

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

Syntax:

```
ARCCNF SMP <Controller#> Enclosure <Connector# Channel# Device#> Expander
<Expander#> <CommandType1> [ASCII]
ARCCNF 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

```
ARCCNF SMP 1 Enclosure 1 2 0 Expander 0 RGR
ARCCNF SMP 1 Enclosure 1 2 0 Expander 1 DR 0
```

2.54 **arccnf task**

Description

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

Syntax: General Usage

```
ARCCNF 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>
TASK START <Controller#> DEVICE ALL UNINITIALIZE
```

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

Options:

- 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`] [`PATTERN` <pattern>]—removes all data from the drive in a secure fashion to prevent any possible recovery of the erased data. (See [arccnf atapassword](#) on page 18 for details about setting the password.) Erase patterns:
 - 1 : Zero - Initializes all blocks to zero.
 - 2 : Random Zero - Initializes block to random value then zero.
 - 3: Random Random Zero - Initializes block to random value, next block to random value, then zero.
- `UNINITIALIZE`—When specified with `ALL`, clears Microsemi Adaptec meta-data and any OS partitions from all drives on the controller; existing data on the drive is destroyed.

MAXCACHE options:

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

Examples

```
ARCCONF TASK START 1 LOGICALDRIVE 1 VERIFY
ARCCONF TASK START 1 DEVICE 0 0 SECUREERASE <password> PATTERN 1
ARCCONF TASK START MAXCACHE COHERENCYCHECK ONCE
ARCCONF TASK STOP 1 DEVICE 0 0
ARCCONF TASK START 1 DEVICE ALL UNINITIALIZE
```


2.55 **arccnf uninit**

Description

Uninitializes one or more physical drives. The uninitialize command clears Microsemi Adaptec meta-data and any OS partitions from a drive; existing data on the drive is destroyed. Drives can be 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 Microsemi Adaptec meta-data but may or may not have an OS partition.

Note: Uninitialized drives are compatible with any HBA and can be exchanged with drives on the motherboard's SATA interface. For more information about uninitialized devices, see [arccnf setcontrollermode](#) on page 45.

Syntax:

```
ARCCNF UNINIT <Controller#> <Channel# Drive#> [Channel# Drive#] ... [nologs]
ARCCNF 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 on the controller.

nologs

Suppresses log output for the command.

Examples

```
ARCCNF UNINIT 1 0 12 0 13
ARCCNF UNINIT 1 ALL
```

2.56 **arccnf verifywrite**

Description

Enables or disables the verify write feature on the controller.

Syntax

```
ARCCNF VERIFYWRITE <Controller#> <ENABLE | DISABLE> [nologs]
```

Parameters

Controller#

The controller number.

ENABLE

Enables verify write feature.

DISABLE

Disables verify write feature.

Examples

```
ARCCONF VERIFYWRITE 1 ENABLE
ARCCONF VERIFYWRITE 1 DISABLE
```

A getconfig Output Summary

Table 3 • getconfig output summary

getconfig Command Field	Description	Possible Values/Units
Controller status	Overall status of the controller based on its resources.	optimal,failed,passive,removed,Signature error,inaccessible,Down,driver update required
Controller mode	Mode of the controller on which it is operating.	RAID(Expose RAW),Auto Volume, HBA,RAID(Hide RAW),Simple Volume, SmartHBA
Controller Cache Preservation	Data on DRAM of controller can be preserved.	Enabled ,Disabled
Channel description	Technology type of the channel(s) on the specified controller.	SCSI,SATA,SAS,IDE,FIBRE,SATA_ON_SAS
Controller Model	Model number of the controller.	n/a
Controller Serial Number	Serial number of the controller.	n/a
Controller World Wide Name	Unique World Wide Name of the controller.	n/a
Controller Alarm	The state of the alarm on the controller.	Not available,Enabled,Disabled,Unknown
Physical Slot	Slot number of this controller	n/a
Temperature	Current temperature of the controller	degree Celsius and degree Fahrenheit
Installed Memory	Memory capacity of DRAM installed on controller .	Memory in MB
Global task priority	The execution priority for all tasks running on the controller	Low,Medium,High
Performance Mode	An application-specific performance mode to improve I/O throughput based on the needs of your application.	Dynamic,OLTP/Database,DataCenter, User Defined
Host Bus type	Type of host expansion bus standard	Unknown,PCI,PCI-X,PCIE,NA
Host Bus Speed	Speed of host expansion bus standard in MHz	n/a
Host bus link width	Actual width bits /links depending on host bus type	n/a
Stayawake Period	The period during which disk drives on the controller always operate at their peak spin rate.	n/a
Spinup limit internal drives	Maximum number of internal disk drives (drives in an enclosure) that the controller may spin-up at the same time.	n/a
Spinup limit external drives	Maximum number of external disk drives (drives in an enclosure) that	n/a

getconfig Command Field	Description	Possible Values/Units
	the controller may spin-up at the same time.	
Defunct disk drive count	Number of dead drives connected to the controller.	n/a
Logical devices/Failed/Degraded	The number of logical devices on the controller, number of failed logicals and number of degraded logical on the controller.	n/a
NCQ status	Lets SATA disk drives arrange commands into the most efficient order for optimum performance	Enabled ,Disabled
Statistics data collection mode	Whether the statistics collection on the controller .The stats can be seen by arconf getlogs command is enabled or not.	Enabled ,Disabled
Global Physical Device Write Cache Policy	The write cache policy for all physical drives on a controller	Enable All, Disable All, Drive Specific
Monitor Log Severity Level	The severity level of monitor logs captured from firmware.	Emergency,Alert,Critical,Error,Warning,Notification,Informational,Debug,Unknown
Global Max SAS Phy Link Rate	The maximum connection speed (or PHY link rate) for SAS devices on a controller	6GBps,12GBps,Unknown
RAID Properties		
Copyback	When a logical drive is rebuilt using a hot spare (see Failed Disk Drive Protected by a Hot Spare), data from the failed drive is transferred to the hot spare	Enabled,Disabled
Background consistency check	Lets maxView Storage Manager continually and automatically checks your logical drives for bad or inconsistent data once they're in use.	Enabled,Disabled
Background consistency check period	The background consistency check period in days	Days
Automatic Failover	Controls the rebuilding of a logical drive when a failed drive is replaced.	Enabled,Disabled
Error Tunable Profile	The current error tunable profile	Aggressive, Normal, Relaxed, User Defined
maxCache flush and fetch rate	To optimize the read cache performance of maxCache container	Valid range is 1 to 1000. 1-50 Low, 51-100 Medium, 101-1000 High
maxCache Read, Write Balance Factor	The read/write ratio is 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.	Valid range is 1 to 10
maxCache Dirty Page Threshold	Controls the amount cache space allocated to "dirty" data; that is, B105	Valid range is 1 to 100

getconfig Command Field	Description	Possible Values/Units
	. The threshold value ranges from 1-100 (percent). Once the percentage of dirty pages crosses the threshold, the data are flushed to disk.	
Controller BIOS Setting Information		
Runtime BIOS	Allows the controller to act as a bootable device.	Enabled,Disabled
Array BBS Support	The controller presents attached bootable devices up to the BIOS for boot device selection. This is relevant for logical arrays.	Enabled,Disabled
Physical Drives Displayed during POST	Connected disk drives are displayed during system Power On Self Test (POST). Displaying the disk drives adds a few seconds to the overall POST time.	Enabled,Disabled
Backplane Mode	Adaptec Series 6 Controllers (except Series 6E/6T): When set to Auto, controller automatically detects backplane signal type: I2C or SGPIO. To set the backplane mode explicitly select SGPIO, I2C, or Disabled. Default is Auto. Adaptec Series 7, Series 8, and Series 6E/6T Controllers: When set to Default, controller automatically sets the backplane mode to IBPI. To set the backplane mode explicitly, select IBPI, SGPIO, or Disabled. Default is IBPI.	IBPI,SGPIO,N/A ,Unknown
BIOS Halt on Missing Drive Count	The number of missing drives during POST. If => "count", halt. Default is 8.	
Controller Version Information		
BIOS	Current version of BIOS flashed onto the controller	n/a
Firmware	Current version of Firmware flashed onto the controller	n/a
Driver	Current version of driver installed on the system	n/a
Boot Flash	Firmware version that will run on re-boot	n/a
CPLD(Load version/Flash Version)	CPLD version that is loaded and that is available in flash	n/a
SEEPROM(Load Version/Flash Version)	SEEPROM version that is loaded and that is available in flash	n/a
Controller Cache Backup Unit Information		

getconfig Command Field	Description	Possible Values/Units
Overall Backup Unit Status	Status of flash backup unit connected to the controller. For more information, see Logical Drive, HDD, and Flash Backup System Status and Error Conditions on page 68.	Not Present,Not Ready,Ready,Failed,Fatal,Preparing,Health Normal,Health Low,Health Dead,Invalid
Backup Unit Type	Type of back up unit connected to the controller or on controller	AFM700/700-LP
Non-Volatile Storage Status	The status of the non volatile storage	Not Present,Not Ready,Ready,Failed,Fatal,Preparing,Health Normal,Health Low,Health Dead,Invalid
Supercap Status	Super cap attached to the backup unit. For more information, see Logical Drive, HDD, and Flash Backup System Status and Error Conditions on page 68.	Not Present,Not Ready,Ready,Failed,Fatal,Preparing,Health Normal,Health Low,Health Dead,Invalid
Current Temperature	Temperature of supercap	degrees Celsius
Threshold temperature	Temperature above which the supercap will become overheated	degrees Celsius
Life -time Temperature Recorded(Min/max)	Life-time min/max temperature recorded	degrees Celsius
Voltage(Present/Max)	Voltage in mV and max voltage in mV	Millivolts (mV)
Life-time Max Voltage Recorded	Life-time max Voltage of BU system	Millivolts (mV)
Current Drawn(Present/Max)	Current Drawn in mA present and max	Millivolts (mV)
Health	Health level of BU system	percentage
Charge level	Charge level of BU system	percentage
Estimated Life-time	Life -time estimate in years and months	n/a
Serial number	Super cap serial number	n/a
Learn Status	Calibration operation run by controller periodically to know status of battery	Not Ready,Idle,Pending,"Active,Scheduled","Active Requested","Active,Manual",Passed,Failed,not Ready,Fatal,Unknown
Next Scheduled Learn Cycle	Time until next schedule learn cycle in hours	Hours
Present Capacitance	Capacitance in Farad	Farad
Connector Information		
Connector Id	Connector number on the controller	n/a
Lane Information		
Channel ID	channel identifier for this lane	n/a
Device ID	device identifier for this lane	n/a
SAS Address	SAS address for this lane	n/a
PHY Identifier	phy identifier for this lane	n/a

getconfig Command Field	Description	Possible Values/Units
Lane SAS Phy Information		
SAS Address	SAS address for this lane SAS Phy	n/a
Attached Phy Identifier	Attached phy identifier for this lane sas phy	n/a
Attached SAS Address	Attached SAS address for the lane sas phy	n/a
Negotiated Link Rate	link rate for the lane SAS phy	n/a
Logical device information		
Logical device number	Unique ID of logical drive listed	n/a
Logical device name	Logical Drive name	n/a
Block Size of member drives	Block size reported by logical member drives.	512 Bytes,4k
RAID level	RAID Level on which logical drive has been created	0,1,1E,5,5E,5EE,00,10,1E0,50,5E0, Spanned Volume,RAID_Volume,Simple_volume,6 XOR,6 Reed-Solomon, 60 XOR,60 Reed- Solomon
Unique Identifier	Unique ID of logical drive	n/a
Status of logical device	State of logical drive based on health of RAID members of logical device along with running task information on the logical. For more information, see Logical Drive, HDD, and Flash Backup System Status and Error Conditions on page 68.	<ul style="list-style-type: none"> • Optimal • Impacted • Failed • Clearing • Logical Device Reconfiguring • Suboptimal, Fault Tolerant • Suboptimal, Reconfiguring • Suboptimal, Rebuilding • Degraded • Degraded, Reconfiguring • Degraded, Rebuilding • Flushing • Does not exist
Size	Size where actual data is striped across the disk drives	n/a
Parity Space	Parity size in logical drive calculated by RAID level specifications.	n/a
Stripe-unit size	The stripe size is the amount of data (in KB) written to one disk drive, before moving to the next disk drive in the logical device.	n/a
Read-cache setting	The controller monitors read access to a logical drive and, if it sees a pattern, pre-loads the cache with data that seems most likely to be read next, thereby improving performance.	Enabled,Disabled
Read-cache status	Whether the read cache setting is on or off	On ,Off

getconfig Command Field	Description	Possible Values/Units
Write-cache setting	Determines when data is stored on a disk drive and when the controller communicates with the operating system.	Enabled, Disabled
Write-cache status	Whether the write cache is enabled, disabled or enabled with backup support	wt,wb,wbw
maxCache write cache status	whether the maxcache write caching is enabled for logical drives or not	On ,Off
Physical Device information		
Device #	Drive number	n/a
State	current state of physical drive based on operations done on it.	Ready,online,Failed,standby,Hots-pare,Rebuilding,Partitioned,Does not Exist,Unsupported,copying back, RAW(Pass through),RAW(Smart HBA), Unknown
Block Size	Maximum size of data block on disk drives which are RAID members of logical device	512KB,4K
Supported	Whether the connected drive is supported by the controller.	Yes,No
Programmed Max Speed	The maximum transfer speed supported by this drive	Basic SCSI,SCSI 2,Fast SCSI 2,Ultra SCSI,Ultra2 SCSI,Ultra 160,Ultra 320, SATA 1.5Gb/s,SATA3.0Gb/s,SATA 6.0Gb/s,SATA12.0Gb/s,SAS 1.5Gb/s, SAS3.0Gb/s,SAS6.0Gb/s,SAS12.0Gb/s,SATA on SAS 1.5Gb/s,SATA on SAS3.0Gb/s,SATA on SAS 6.0Gb/s,SATA on SAS12.0Gb/s,Unknown
Transfer Speed	Negotiated link rate of the device connected	Basic SCSI,SCSI 2,Fast SCSI 2,Ultra SCSI,Ultra2 SCSI,Ultra 160,Ultra 320, SATA 1.5Gb/s,SATA3.0Gb/s,SATA 6.0Gb/s,SATA12.0Gb/s,SAS 1.5Gb/s, SAS3.0Gb/s,SAS6.0Gb/s,SAS12.0Gb/s,SATA on SAS 1.5Gb/s,SATA on SAS3.0Gb/s,SATA on SAS 6.0Gb/s,SATA on SAS12.0Gb/s,Unknown
Reported Channel,Device(T:L)	Virtual path/target/lun for device	n/a
Reported Location	Location of the connector and device relative to connector	n/a
Vendor	Physical device manufacturer name	n/a
Model	Product model name of physical device	n/a
Firmware	Firmware version of the physical device	n/a
Serial number	Serial number of physical device.	n/a
World wide name	Reported world wide name provided by manufacturer	n/a

getconfig Command Field	Description	Possible Values/Units
Reserved Size	Reserved capacity of the drive	n/a
Used size	Used capacity of the drive	n/a
Unused size	Unused or available capacity of the drive	n/a
Total size	Sum of used,unused capacity of the drive	n/a
Write Cache	The write cache setting determines when data is stored on a disk drive and when the controller communicates with the operating system.	Write back,Write through
S.M.A.R.T	Self-Monitoring, Analysis and Reporting Technology is supported or not	Yes,No
S.M.A.R.T Warnings	any SMART warning generated or not	Smart event from drive sense data, e.g. code = 0x0B
Power State	The power management options for a controller affect all logical drives on that controller.	Full RPM,Powered off,Reduced RPM
Supported Power States	These are power management states supported by different vendor hard drives	Full RPM,Powered off,Reduced RPM, Standby
SSD	The connected drive is SSD or not	Yes,No
Temperature	The recent temperature of the drive in celsius and fahrenheit.	n/a
NCQ status	Lets SATA disk drives arrange commands into the most efficient order for optimum performance.NCQ status is enabled or not	Enabled,Disabled
Device Phy Information		
PHY Identifier	Phy identifier for this device	n/a
SAS Address	SAS address for the device	n/a
Attached Phy Identifier	Attached phy identifier for this device	n/a
Attached SAS Address	Attached SAS address for this device	n/a
Runtime Error Counters		
Hardware error count	sense key 4 value	n/a
Medium error count	count of the number of medium errors	after drive encounters a medium error, FW will attempt bad block recovery
Parity error count	count of the number of parity errors	SCSI parity error encountered i.e. sense code = 47h . This will also consequently abort a command and increment the respective counter.
Link error count	count of the number of link errors	<ul style="list-style-type: none"> SMP Response frame received with errors e.g. zero frame size, exceeds max length, missing EOF, len mismatch with FIS type

getconfig Command Field	Description	Possible Values/Units
		<ul style="list-style-type: none"> Link timeout while transmitting frame, IO could not be delivered to drive Encountered open Reject (Bad/Wrong Destination) i.e. something is wrong with the topology Unable to deliver/issue command to drive, break received LUN reset or I_T nexus reset Open zone violation i.e. requested phy is not in the same zone as initiator or zoning permissions are invalid No PHY's in the port or the port itself is down Encountered DMA transmit error
Aborted command count	count of the number of aborted commands	<ul style="list-style-type: none"> Disk not accepting commands because format is in progress A passthrough command received invalid response Timeout, receiving OPEN_REJECT(Retry) Open error due to IO abort A scsi task management command was issued but the response was invalid Task management response has incorrect LUN Cannot communicate due to protocol mismatch Unable to successfully open a connection during the data phase of a command
Smart warning count	count of the number of smart warnings on the device	n/a
maxCache information		
maxCache device number	Always 100 for a maxCache device	n/a
maxCache device name	name of maxCache container	n/a
Block Size of member drives	Block size of SSD constituting the maxCache	512 Bytes,4k,Unknown
maxCache dirty status	Does the maxCache contain dirty data that is data that has not been committed to disk or is it clean	Dirty,Clean
RAID level	RAID level of maxcache	0,1,1E,5,5E,5EE,00,10,1E0,50,5E0,Spanned Volume,RAID_Volume,Simple_volume,6 XOR,6 Reed-Solomon,60 XOR,60 Reed-Solomon
Background Coherency Check	Chooses to verify the maxCache Device without fixing inconsistent or bad data, or run a coherency check	Active Always,Inactive,Unknown

getconfig Command Field	Description	Possible Values/Units
	to compare valid pages of the max-Cache Device with their corresponding logical drive storage.	
Status of maxCache	state of maxCache device based on health of RAID members in the max-Cache device	Does not exist,Failed,Optimal,Degraded,Logical Device Reconfiguring,"Degraded,System","suboptimal,Fault tolerant","Suboptimal,Reconfiguring","Suboptimal,System","Degraded,Rebuilding",Flushing,"Suboptimal,Rebuilding"
Size	size of maxCache device in MB	n/a
maxCache write cache status	maxCache write caching status for each logical device in your storage space.	On,Protected,Disabled(No Battery Protection),Off(Non redundant max-Cache Device),Off
Protected by Hot-Spare	If the maxCache device is protected by hot spare. A hot spare is a SSD (Solid State Drive) that automatically replaces any failed drive in a max-Cache device, and can subsequently be used to rebuild that maxCache device.	Yes,No
Failed stripes	any bad stripes or bad blocks for a logical	Yes,No

B Logical Drive, HDD, and Flash Backup System Status and Error Conditions

Logical Drive States

ARCCONF displays the following states for a logical drive.

Optimal	<ul style="list-style-type: none"> The logical drive is healthy. In case of redundant Logical Drive types: it has full redundancy RAID 1, RAID 1E and RAID10 volumes created using “quick init” are shown as “optimal” as redundancy is being established on every write I/O
Impacted	<ul style="list-style-type: none"> The logical drive has been created. Redundancy information has not yet been built completely
Failed	<ul style="list-style-type: none"> More member disks than supported by the redundancy level of the logical drive have failed. Logical Drive is taken offline
Clearing	<ul style="list-style-type: none"> Observed when an array is created using method ‘clear’. The logical drive enters the clearing state when firmware zeros out first and last 8 blocks of the container space.
Logical device Reconfiguring	<ul style="list-style-type: none"> A logical drive that is morphing (eg, raid level migrations / online capacity expansion)
Suboptimal, Fault Tolerant	<ul style="list-style-type: none"> There are one or more drive failures but the logical drive is still fault tolerant (ie, single drive failure on RAID-6 or RAID-60). The logical drive is in steady state
Suboptimal, Reconfiguring	<ul style="list-style-type: none"> There are one or more drive failures but the logical drive is still fault tolerant (ie, single drive failure on RAID-6 or RAID-60). The logical drive is morphing.
Suboptimal, Rebuilding	<ul style="list-style-type: none"> There are one or more drive failures but the logical drive is still fault tolerant (ie, single drive failure on RAID-6 or RAID-60). The array is recalculating parity.
Degraded	<ul style="list-style-type: none"> The redundant logical drive has suffered at least one member disk failure and any more disk failures would fail the logical drive (ie, two drive failure on RAID 6 or one drive failure on other RAIDs)
Degraded, Reconfiguring	<ul style="list-style-type: none"> A degraded logical drive that is morphing
Degraded, Rebuilding	<ul style="list-style-type: none"> A degraded logical drive where rebuild has started on any remaining members
Flushing	<ul style="list-style-type: none"> There is a flushing task on a logical drive

HDD Error Statistics

ARCCONF displays the following HDD error statistics.

Aborted Command Count	Types of aborted command instances: <ul style="list-style-type: none"> • Timeout receiving OPEN_REJECT(Retry) • Open error due to IO abort • SCSI task management command was issued but the response was invalid • Task management response has incorrect LUN • Cannot communicate due to protocol mismatch • Unable to successfully open a connection during the data phase of a command
Link Failure count	Link failure characterized by the following scenarios: <ul style="list-style-type: none"> • SMP Response frame received with errors eg, zero frame size, exceeds max length, missing EOF, len mismatch with FIS type • Link timeout while transmitting frame, I/O could not be delivered to drive • Encountered open Reject (Bad/Wrong Destination) ie, something is wrong with the topology • Unable to deliver/issue command to drive, break received • LUN reset or I_T nexus reset • Open zone violation ie, requested phy is not in the same zone as initiator or zoning permissions are invalid • No PHYs in the port or the port itself is down • Encountered DMA transmit error
Medium Error Count	<ul style="list-style-type: none"> • The drive has encountered a medium error and FW will attempt bad block recovery
Parity Error Count	<ul style="list-style-type: none"> • SCSI parity error encountered i.e. sense code = 47 h. This will also consequently abort a command and increment the respective counter.
Smart Warning Count	<ul style="list-style-type: none"> • Smart event from drive sense data eg, code = 0x0 B

Flash Backup Status

ARCCONF displays the following status for the Flash Backup system.

General Backup Unit status	Preparing: <ul style="list-style-type: none"> • The GB unit is preparing the NAND flash for backup. The supercap can take up to 10 minutes to charge to 100% from zero charge and report ready status Ready: <ul style="list-style-type: none"> • The backup unit is enabled with the supercap charged and NAND flash prepared Not Ready: <ul style="list-style-type: none"> • Observed if the supercap is not present or has suffered a fatal error or if the BU temperature has exceeded allowed maximum
Supercapacitor status	Fatal:

- FW could not retrieve green backup information or configuration due to hardware issues , overvoltage, etc

Health Normal / Low / Dead:

- Health parameter indicates overall energy holding ability of the capacitor and mathematically represents (supercap capacitance / initial capacitance)
- Health > 90% will be displayed as normal
- Dead status implies that capacitor would need replacement

Not Supported:

- FW does not have green backup feature enabled

Not Present:

- The backup unit is not installed