User's Guide

Microsemi Adaptec RAID Controller Command Line Utility

Released

October 2017
## Revision History

<table>
<thead>
<tr>
<th>Issue</th>
<th>Issue Date</th>
<th>Details of Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>3</td>
<td>October 2017</td>
<td>Add Linux/Unix LogFiles for PLAYCONFIG and SAVECONFIG commands; add notes to RESCAN and SAVESUPPORTARCHIVE command sections; add SETCONTROLLERPARAM command; update GETSMARTSTATS command.</td>
</tr>
<tr>
<td>2</td>
<td>September 2016</td>
<td>Add UARTLOG CONSOLE command; add PPC Linux and pre-boot plugin installation; add static-linked arcconf installation for Linux x64.</td>
</tr>
<tr>
<td>1</td>
<td>April 2016</td>
<td>Add new commands; TASK uninit ALL; new GETCONFIG component properties; Logical Drive, HDD, and Backup System Status and Error Conditions.</td>
</tr>
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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 chapter explains how your Microsemi SmartHBA-SA controller supports 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.)

Follow the instructions in this section to install ARCCONF on the supported operating systems.

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 and Installing on FreeBSD on page 12.

1.1.1 Downloading the Installation Packages

Complete these steps to download the installation package for your operating system(s):

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. It also includes a statically-linked ARCCONF executable, which allows you to run the program without any OS library dependencies.

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.

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 10 for details).

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

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows 64-bit</td>
<td>setup_asm_x64.exe</td>
</tr>
</tbody>
</table>

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 for details).

2. Run the .bin file for your operating system version (where xxxx=build number):

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux 64-bit</td>
<td>./StorMan-2.02-xxxxx.x86_64.bin</td>
</tr>
</tbody>
</table>

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 10 for details).

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

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux 64-bit</td>
<td>dpkg -i StorMan-2.02-xxxxx_amd64.deb</td>
</tr>
</tbody>
</table>

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 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 `arcconf` executable from the original download location to your FreeBSD system (see Downloading the Installer Package 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 10 for details):
   - `vmware-esx-provider-arcconf.vib`
   - `vmware-esx-provider-arcsmis.vib`

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

2. Check for existing installation of arcconf.
   `esxcli software vib list | grep arcconf`

3. Remove the existing arcconf package.
   `esxcli software vib remove -n arcconf`
   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 arcconf package.
   `esxcli software vib install --no-sig-check -v /tmp/vmware-esx-provider-arcconf.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.

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 for details).
2. Install the rpm package for your operating system version (xxxxx=build number).
   
   **Options** | **Description**
   --- | ---
   XenServer 64-bit | rpm -i StorMan-2.02-xxxxx_amd64.rpm


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 for details).
2. Double-click the setup program for your operating system:
   
   **Options** | **Description**
   --- | ---
   Windows GOS 64-bit | setup_maxview_gos_x64.exe

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:

   a) Host IP Address (ESXi or XenServer host)
   b) Web Server Port: 8443
   c) ESXi or XenServer Host user name (default: root)
   d) ESXi or XenServer Host 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 for details).
2. Run the installer for your operating system version.
   
   **Options** | **Description**
   --- | ---
   Linux GOS 64-bit | ./Storman-2.02.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.

1.1.10 Installing on PowerPC

- Installing ARCCONF on PowerPC:
  - Installing on RHEL PowerPC 64-bit
    `rpm -i Arcconf-2.02-xxxxx.ppc64le.rpm`
  - Installing on Ubuntu PowerPC 64-bit
    `dpkg -i Arcconf-2.02-xxxxx.ppc64el.deb`
  - Installing on SLES PowerPC 64-bit
    `rpm -i Arcconf-2.02-xxxxx.ppc64le.rpm`

- Installing ARCCONF in Petitboot:
  - Extract package `arcconf-2.02-xxxxx.tar.xz` in the folder of your choice.

Where `xxxx` is the installer version.

1.2 Starting the Command Line Utility

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

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows</td>
<td><code>&lt;install_dir&gt;\arcconf.exe</code></td>
</tr>
<tr>
<td>Linux</td>
<td><code>/usr/&lt;install_dir&gt;/arcconf</code></td>
</tr>
<tr>
<td>Solaris</td>
<td><code>/opt/StorMan/arcconf</code></td>
</tr>
<tr>
<td>FreeBSD</td>
<td><code>&lt;install_dir&gt;/arcconf</code></td>
</tr>
<tr>
<td>VMware</td>
<td><code>/usr/StorMan/arcconf</code></td>
</tr>
<tr>
<td>VMware ESXi with Remote ARCCONF</td>
<td><code>/usr/RemoteArcconf/arcconf</code></td>
</tr>
<tr>
<td>XenServer</td>
<td><code>/usr/StorMan/arcconf</code></td>
</tr>
</tbody>
</table>

where `Install_dir` is the directory where the utility is installed.

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

This chapter explains how to use the command line utility interactively or in batch mode. With interactive mode, enter commands at the prompt. In batch mode, create scripts and run the script in the appropriate shell, as described in the table below.

**Table 1 • ARCCONF Batch Environments**

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

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

The return values for each command are the same:

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

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

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

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**

<table>
<thead>
<tr>
<th>atapassword</th>
<th>getlogs</th>
<th>resetstatisticcounters</th>
<th>setncq</th>
</tr>
</thead>
<tbody>
<tr>
<td>backupunit</td>
<td>getperform</td>
<td>romupdate</td>
<td>setperform</td>
</tr>
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<td>setcustommode</td>
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<tr>
<td>getexception</td>
<td></td>
<td>setmaxcache</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>setname</td>
<td></td>
</tr>
</tbody>
</table>
**Note:** In the command syntax descriptions, <> indicates a required parameter and [] indicates an optional parameter.
### 2.2 arcconf atapassword

**Description**

Sets or clears the drive's 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 arcconf consistencycheck

Description

Toggles the background consistency check modes of the controller.

Syntax

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

Parameters

Controller#
  Controller number.

On [Delay] | Off
  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.

On | Off
  Turns background consistency check on or off. A value of 0 disables the consistency check (effectively,
  the same as setting the parameter to Off).

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.

PARALLELCOUNT <Count>
  Sets the parallel surface scan count for the controller. A value of 1 disables the consistency check.

Noprompt
  Optional parameter that suppresses the confirmation prompt.

Examples

ARCCONF CONSISTENCYCHECK 1 PERIOD 30
ARCCONF CONSISTENCYCHECK 1 ON 20
ARCCONF CONSISTENCYCHECK 1 OFF
ARCCONF CONSISTENCYCHECK 1 PARALLELCOUNT 4

2.5 arcconf copyback

Description

Enables or disables the copyback feature, which attempts to keep drives in the original slot order after
rebuids.
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 arccnf 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 [Options] <Size> <RAID#> <CHANNEL# DRIVE#> ... [noprompt] [nologs]
ARCCONF CREATE <Controller#> LOGICALDRIVE RVOLUME <LD#> <LD#> ... [noprompt] [nologs]
ARCCONF CREATE <Controller#> JBOD <CHANNEL# DRIVE#> [CHANNEL# DRIVE#] ... [noprompt] [nologs]
ARCCONF CREATE <Controller#> LOGICALDRIVE [Options] <Size> <RAID#> CHANNEL# DRIVE#] ... [noprompt] [nologs]
ARCCONF CREATE <Controller#> LOGICALDRIVE [Options] <Size> <RAID#> ARRAY <Array#> [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 8, 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.
- RAID—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 DEFAULT. 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 `arcconf setmaxcache` on page 49.

Array <Array#>
Array number on which to create the logical drive, with the following options:
• Sectors <sectors> - Sectors per track of the logical device. Valid options are 32 and 63.
• SSDSmartPath <enable | disable> - Enables or disables logical device acceleration. Default is enabled.
• SSDOverProvisioningOptimization <enable | disable> - Initializes solid state drives that support the rapid parity initialization feature.

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, 5E, 50, 6, 60, and volume are supported. For maxCache, 0, 1, 1E, 5 and Simple_Volume are supported. 0, 1, 10 and 5 are supported.

  **Note:** For a complete list of supported RAID levels for your controller, refer to the product release notes.

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
ARCCONF CREATE 1 LOGICALDRIVE ssdsmartpath enable ssdoverprovisioningoptimization enable 1024 0 ARRAY 0
```

### 2.8  arcconf delete

#### Description

Deletes a logical drive, JBOD, or maxCache logical device or array. 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.
- **arr#**
  - arr# is the number of the array 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
ARCCONF DELETE 1 ARRAY 0
ARCCONF DELETE 1 ARRAY 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 1 SAVE C:\abc.cfg
ARCCONF ERRORTUNABLE 1 CONFIGPARAMS FILE C:\abc.cfg
ARCCONF ERRORTUNABLE 1 CONFIGPARAMS CRC_ERROR_DURATION_SEC 10

2.11 arcconf expanderlist

Description
Returns a list of disk drive expanders on a controller.

Syntax
ARCCONF EXPANDERLIST <Controller#>

Parameters
Controller#
Controller number.

Examples

ARCCONF EXPANDERLIST 1

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:

- 02h—download microcode only; requires system reset or power cycle to activate (default)
- 06h—download microcode with offsets and activate
- 07h—download microcode with offsets, save, and activate
- 08h—download microcode with offsets and defer activation
- 0Fh—activate deferred microcode

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 and array 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.

Note: When displaying adapter information (AD keyword), the Controller Status field is set to OK or Not OK. Its value is set to Not OK only if:

1. Communication with the controller fails. This occurs when the driver returns an error code after attempting to send a command to the controller.
2. A logical drive was created with a newer version of arcconf. Update to the latest utilities.
3. The controller mode (RAID/Mixed/HBA) is supported by the hardware, but not the firmware. Usually, this means that an older version of arcconf is being used against a newer controller. Update to the latest utilities.

For more information, see getconfig Output Summary on page 61.

Syntax

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

Parameters

Controller#
Controller number

LD#
Display information about the specified logical device

AR#
Display information about the specified array

AD/PD/AL...
- AD—Adapter information only
- LD—Logical drive information only
- AR—Array 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
ARCCONF GETCONFIG 1 AR 1

2.15 arcconf 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 arcconf 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 (rebuilds, 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> [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**
Cleans 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**

```bash
ARCCONF GETLOGS 1 EVENT
ARCCONF GETLOGS 1 STATS tabular
ARCCONF GETLOGS 1 DEVICE clear 3 ALL
ARCCONF GETLOGS 1 CACHE LOGICALDRIVE 0
```

### 2.17 arconf getperform

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

**Syntax**

```bash
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 arcconf getsmartstats

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

**Note:** For more information about SMART statistics, see the maxView Storage Manager User's Guide.

**Syntax**

```
ARCCONF GETSMARTSTATS <Controller#> [forcespinup] [Tabular]
```

**Parameters**

- **Controller#**
  Controller number.

- **Tabular**
  Creates output in tabular format.

- **Force Spin Up**
  Read SMART statistics from hard drives when SMART poll is disabled on the controller.

**Examples**

```
ARCCONF GETSMARTSTATS 1
ARCCONF GETSMARTSTATS 1 TABULAR
```

### 2.19 arcconf getstatus

**Description**
The GETSTATUS function displays the status of any background command that is currently running, including information about the most recent rebuild, synchronization, logical-drive migration, and compaction/expansion. The information includes the type of operation, status, logical drive number and logical drive size (for a logical device), channel ID/device ID (for a physical device), 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 arcconf getversion

Description

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

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

Syntax

ARCCONF GETVERSION
ARCCONF GETVERSION <Controller#>

Parameters

Controller#

Controller# is the controller number

Examples

ARCCONF GETVERSION
ARCCONF GETVERSION 1

2.21 arcconf 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]

ARCCONF IDENTIFY <Controller#> LOGICALDRIVE <LogicalDrive#> [TIME <BlinkTime>][nologs]
ARCCONF IDENTIFY <Controller#> DEVICE <Channel# ID#> ... [TIME <BlinkTime>] [nologs]
ARCCONF IDENTIFY <Controller#> ARRAY <Array#> [TIME <BlinkTime>] [nologs]
ARCCONF IDENTIFY <Controller#> ALL [STOP]

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

### Parameters

- **Controller#**
  - Controller number
- **LogicalDrive#**
  - Number of the logical drive to be identified
- **Array#**
  - Array number
- **Channel# ID#**
  - Channel number and ID number for the physical device(s) to be identified
- **ALL**
  - Blinks all physical devices on the controller for 1 hour or until the STOP command is issued
- **TIME <BlinkTime>**
  - Time, in seconds, for the LEDs to continue blinking
- **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
ARCCONF IDENTIFY 1 ARRAY 0 TIME 30
ARCCONF IDENTIFY 1 ALL
ARCCONF IDENTIFY 1 ALL STOP

#### 2.22 arccconf 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. The minimum chunk size is 32768.

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 arccconf 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 arccconf 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).

Expands, shrinks or moves an array, or moves a logical device to a new array.

Syntax

ARCCONF MODIFY <Controller#> FROM <LogicalDrive#> TO [Options] <Size> <RAID#> <CHANNEL# ID#> [CHANNEL# ID#] ... [noprompt]
ARCCONF MODIFY <Controller#> ARRAY <Array#> MOVE <Channel# ID#> [Channel# ID#] ... [nologs]
ARCCONF MODIFY <Controller#> ARRAY <Array#> HEAL <Channel# ID#> [Channel# ID#] ... [nologs]
ARCCONF MODIFY <Controller#> LOGICALDRIVE <LD#> MOVEARRAY <Array#> [nologs]
ARCCONF MODIFY <Controller#> LOGICALDRIVE <LD#> NEWARRAY <Channel# ID#> [Channel# ID#] ... [nologs]

Parameters

Controller#
  The controller number
LogicalDrive#
  The logical drive number to be modified
Array#
  The array ID of the array to be modified
Options
  One of the following:
  - Stripesize <size>—indicates the stripe size in KB. Options are 8, 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. 0, 1, 10 and 5 are supported.

**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.

**MOVE**
Moves an array to a new set of physical devices. Number of new physical devices must equal the number of physical devices in the original array.

**HEAL**
Replaces failed physical devices in the array with the specified devices

**MOVEARRAY**
Moves a logical device to an existing array

**NEWARRAY**
Moves a logical device to a new array created with the specified physical devices

**modifyparitygroups**
Reconfigures the logical device(s) parity groups based on the final number of physical devices in the array

**noprompt**
Suppresses the user prompt

**Examples**

```
ARCCONF MODIFY 1 FROM 2 TO 2048 0 0 123 0 124 0 117
ARCCONF MODIFY 1 ARRAY 1 MOVE 0 2 0 3
ARCCONF MODIFY 1 ARRAY 1 HEAL 0 0 0 1
ARCCONF MODIFY 1 LOGICALDRIVE 0 MOVEARRAY 1
ARCCONF MODIFY 1 LOGICALDRIVE 0 NEWARRAY 0 4 0 5
```

**2.26**

```
arconf 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

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

**Parameters**

**Controller#**
Controller number.

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

**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 arccconf playconfig

Description

Configures a controller using a XML server template file produced by the SAVECONFIG command (see arccconf saveconfig on page 40). 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 (147 GB vs. 150 GB, 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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUCCESS</td>
<td>0</td>
<td>Configuration succeeded, no reboot is required.</td>
</tr>
<tr>
<td>FAILURE_GENERAL</td>
<td>1</td>
<td>An error occurred and the configuration could not be completed.</td>
</tr>
<tr>
<td>SUCCESS_REBOOT</td>
<td>2</td>
<td>Configuration succeeded, but a reboot is required.</td>
</tr>
</tbody>
</table>

Syntax

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

Parameters

Config XML File

The pathname of the server template file.

LogFile

Sets the pathname of the error log file. By default, the error log is available at C:\PMCS\Logs\playconfig.log on Windows operating systems and at /var/log/playconfig.log on Linux/Unix operating systems.

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 arconf preservecache

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  arcconf rescan

Description

Enables the controller to check for the removal of any disk drives in the ready state and to check for the connection of any new disk drives to the controller. 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 arcconf getstatus on page 30 for more information.

Note:
When the SMART poll setting is disabled, the rescan will cause physical drives that are in reduced RPM or powered off states to spin up.

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  arcconf resetstatisticcounters

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 .bin .ufi update files from the Support area at www.adaptec.com.
3. You can download the .bin update files at www.pmcs.com/myPMC

Syntax

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

Parameters

Controller#
The controller number.

BaseName
Absolute path to the controller programmable 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 /usr/home/AC220001.BIN
ARCCONF ROMUPDATE 1 C:\firmwareImage\as483c.bin newversion 12345 force noprompt
2.32 arccconf 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 arccconf playconfig on page 36 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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Value</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUCCESS</td>
<td>0</td>
<td>Configuration XML generated successfully.</td>
</tr>
<tr>
<td>FAILURE_GENERAL</td>
<td>1</td>
<td>An error occurred and the configuration XML could not be generated.</td>
</tr>
</tbody>
</table>

Syntax

ARCCONF SAVECONFIG [Config XML File] [LogFile]

Parameters

Config XML File

The pathname of the server template file. The default name (if you omit this parameter) is C:\PMCS\Logs\saveconfig.xml on Windows operating systems and /var/log/saveconfig.xml on Linux/Unix operating systems.

LogFile

The pathname of the error log file. By default, the error log is available at C:\PMCS\Logs\saveconfig.log on Windows operating systems and /var/log/saveconfig.xml on Linux/Unix operating systems.

Examples

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

2.33 arccconf 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 arccconf 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.
Note:
When the SMART poll setting is disabled, Save Support Archive will cause physical drives that are in reduced RPM or powered off states to spin up.

Syntax

ARCCONF SAVESUPPORTARCHIVE [Path] [Firmware|GUI|CIM|Arcconf|Storlib|Agent|Basecode]
ARCCONF SAVESUPPORTARCHIVE [Path] [Firmware|Arcconf|Storlib|Basecode]

Parameters

Path
Path to store the log files.

Log type:
One of these log files:
- Firmware: saves Firmware logs
- 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  

arccconf seeprom

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  arcconf setalarm

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

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

Parameters
Controller#
   The controller number
On
   Enables the alarm
Off
   Disables the alarm
Silence
   Quiets the currently sounding alarm
Test
   Triggers the alarm

Examples
ARCCONF SETALARM 1 TEST
ARCCONF SETALARM 1 SILENCE

2.36  arcconf 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#> ARRAYBBSUPPORT [enable | disable]
ARCCONF SETBIOSPARAMS <Controller#> DISPLAYEDONPOST [enable | disable]
ARCCONF SETBIOSPARAMS <Controller#> BACKPLANEMODE <mode>
ARCCONF SETBIOSPARAMS <Controller#> BIOSHALTONMISSINGDRIVECOUNT <count>
ARCCONF SETBIOSPARAMS <Controller#> POSTPROMPTTIMEOUT <timeout>
Parameters

Controller#
Controller number

Subfunction

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUNTIMEBIOS [enable</td>
<td>disable]</td>
</tr>
<tr>
<td>ARRAYBBSSUPPORT [enable</td>
<td>disable]</td>
</tr>
<tr>
<td>DISPLAYEDONPOST [enable</td>
<td>disable]</td>
</tr>
<tr>
<td>BACKPLANEMODE &lt;mode&gt;</td>
<td>Sets the backplane mode to 0-IBPI, 1-SGPIO, or 3-Disabled. Default is IBPI.</td>
</tr>
<tr>
<td>BIOSHALTONMISSINGDRIVECOUNT &lt;count&gt;</td>
<td>The number of missing drives during POST. If =&gt; &quot;count&quot;, halt. Count can have a value between 1-255; default is 8.</td>
</tr>
<tr>
<td>POSTPROMPTTIMEOUT &lt;timeout&gt;</td>
<td>Changes the F1/F2 POST prompt timeout for the controller during system boot. Timeout can have a value between 1-255.</td>
</tr>
</tbody>
</table>

Examples

ARCCONF SETBIOSPARAMS 1 RUNTIMEBIOS disable
ARCCONF SETBIOSPARAMS 1 BACKPLANEMODE 1
ARCCONF SETBIOSPARAMS 1 BIOSHALTONMISSINGDRIVECOUNT 5
ARCCONF SETBIOSPARAMS 1 ARRAYBBSSUPPORT enable
ARCCONF SETBIOSPARAMS 1 POSTPROMPTTIMEOUT 10

2.37 arccconf 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 arcconf 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]
ARCCONF SETCACHE <Controller#> LOGICALDRIVE <LogicalDrive#> <logical mode> [noprompt] [nologs]
ARCCONF SETCACHE <Controller#> DEVICEALL <policy> [noprompt] [nologs]
ARCCONF SETCACHE <Controller#> CACHERATIO <read#> <write#>
ARCCONF SETCACHE <Controller#> WAITFORCACHEROOM <enable | disable>
ARCCONF SETCACHE <Controller#> NOBATTERYWRITECACHE <enable | disable>

**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)
    - con - cache enabled
    - coff - cache disabled
- **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

CACHERATIO <read#> <write#>
Sets the cache ratio for the controller:
• read# - Read cache percentage
• write# - Write cache percentage

WAITFORCACHEROOM
Wait for room in the read/write cache when full instead of automatically bypassing it in favor of higher performance. Enabling this feature prevents RAID 1 inconsistencies that occur whenever the host changes buffer contents during write operations.
• Enable - wait for room in the read/write cache
• Disable - do not wait for room in the read/write cache

NOBATTERYWRITECACHE
Enables write caching when a battery or supercapacitor is not present or fully charged. This setting applies to all logical drives on the controller; at least one logical drive must exist before usage.
• Enable - enable write caching on controller without fully charged battery or supercapacitor
• Disable - disable write caching on controller without fully charged battery or supercapacitor

Caution: Enabling write caching without a fully charged battery/supercapacitor may cause data loss in the event of a power failure.

Examples
ARCCONF SETCACHE 1 LOGICALDRIVE 1 RON
ARCCONF SETCACHE 1 DEVICE 0 0 WB
ARCCONF SETCACHE 1 DEVICEALL Enable
ARCCONF SETCACHE 1 CACHERATIO 60 40
ARCCONF SETCACHE 1 WAITFORCACHEROOM enable
ARCCONF SETCACHE 1 NOBATTERYWRITECACHE 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 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 arcconf setperform on page 51 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 arcconf uninit on page 59). 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).

- **Smart HBA Mode**—RAID volumes and RAW (unconfigured) devices are exposed to the operating system.

Syntax:

ARCCONF 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
- 5 - Smart HBA Mode

nologs
Suppresses log output for the command.

Examples

ARCCONF SETCONTROLLERMODE 1 2
ARCCONF SETCONTROLLERMODE 1 0
ARCCONF SETCONTROLLERMODE 1 4
ARCCONF SETCONTROLLERMODE 1 5

2.41 arcconf setcontrollerparam

Description
Changes a parameter of a controller.

Syntax

ARCCONF SETCONTROLLERPARAM <Controller#> SMARTPOLL <Enable | <Disable Raw>> [nologs] [noprompt]

Parameters

Controller#
The controller number.

SMARTPOLL
Configure SMART poll setting on the controller.

- Disable Raw: Disable SMART poll for RAW physical drives only.
- Enable: Enable SMART poll for RAW physical drives only.

Examples

ARCCONF SETCONTROLLERPARAM 1 SMARTPOLL DISABLE RAW
2.42 arcconf 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 arcconf setperform on page 51.

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_STRIPES)
- BYPASSWRIOSIZE (CACHE_BYPASS_WRITE_IO_SIZE)
- IOLIMMSASHDD (IO_LIMIT_SAS_HDD)
- IOLIMMSASSSD (IO_LIMIT_SAS_SSD)
- IOLIMMSATAHDD (IO_LIMIT_SATA_HDD)
- IOLIMMSATASSD (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 <LogicalDrive#> WRITECACHE <ENABLE|DISABLE>
ARCCONF SETMAXCACHE <Controller#> LOGICALDRIVE <LogicalDrive#> WRITEPOLICY <policy>
ARCCONF SETMAXCACHE <Controller#> LOGICALDRIVE <LogicalDrive#> DIRTYPAGETHRESHOLD <dirtyPageThreshold#>
ARCCONF SETMAXCACHE <Controller#> WBCVALID <ENABLE|DISABLE>

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

Parameters

Controller#
The controller number.

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

Channel#
The channel number for the SSD.

Device#
The device number for the SSD.

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

FlushAndFetchRate#
The read cache fetch rate from 1 to 1000: 1-50=Low, 51-100=Medium, 101-1000=High. The default is 100.
Note: The lower the rate the longer the page is kept on the SSD before it is flushed from the cache.

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

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

Policy
maxCache write cache policy:

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

Clear
Cleans the maxCache pool.

Examples

ARCCONF SETMAXCACHE 1 LOGICALDRIVE 1 READCACHE ENABLE
ARCCONF SETMAXCACHE 1 LOGICALDRIVE 1 WRITECACHE ENABLE WRITEPOLICY WT
ARCCONF SETMAXCACHE 1 DIRTPAGE_THRESHOLD 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 arccconf 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  arcconf setncq

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

Syntax
ARCCONF SETNCQ <Controller#> ENABLE|DISABLE

Parameters
Controller#
The controller number

Examples
ARCCONF SETNCQ 1 ENABLE

2.46  arcconf setperform

Description
Changes controller settings based on the application type.

Syntax
ARCCONF SETPERFORM <Controller#> <Performance Mode> [nologs]
ARCCONF SETPERFORM <Controller#> MNPDELAY <Delay> [no logs]
ARCCONF SETPERFORM <Controller#> DPO <Enable | Disable> [no logs]

Parameters
Controller#
The controller number

Performance Mode

<table>
<thead>
<tr>
<th>Setting</th>
<th>Behavior</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 (DYNAMIC/Default)</td>
<td>Performance criteria adjusts automatically based on controller usage, RAID level, and disk drive type.</td>
</tr>
<tr>
<td>2 (OLTP/Database)</td>
<td>Performance criteria is optimized for transaction-oriented applications such as data entry and retrieval.</td>
</tr>
<tr>
<td>3 (Big Block Bypass)</td>
<td>DRAM write cache is bypassed based on IO write size; performance is optimized for serving Web pages and retrieving data.</td>
</tr>
</tbody>
</table>

MNPDELAY <Delay>
Sets the monitor and performance delay for the controller, in seconds. Default is 60 minutes (3600 seconds).

DPO
Enables or disables the degraded performance setting for the controller. Default is disabled.

Examples

ARCCONF SETPERFORM 1 2
ARCCONF SETPERFORM 1 3
ARCCONF SETPERFORM 1 MNPDELAY 1800
ARCCONF SETPERFORM 1 DPO enable

2.47 arcconf 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]
ARCCONF SETPOWER <Controller#> POWERMODE <mode>
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.

**mode**
- Sets the power mode for the controller. Valid values are 1, 2, and 3:
  - 1: Minimum power - Set static settings to lowest possible values and reduces dynamically based on workload
  - 2: Balanced - Set static settings based on configuration and reduce dynamically based on workload
  - 3: Maximum power - Set static settings to highest possible values and do not reduce dynamically

Examples

```
ARCCONF SETPOWER 1 STAYAWAKE DISABLE
ARCCONF SETPOWER 1 SPINUP 4 4
ARCCONF SETPOWER 1 LD 2 POWEROFF 60
ARCCONF SETPOWER 1 LD 2 SLOWDOWN 20 POWEROFF 60 VERIFY 12
ARCCONF SETPOWER 1 POWERMODE 2
```
2.49 arcconf setpriority

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

Syntax
ARCCONF SETPRIORITY <Controller#> [TASK ID] <New Priority> [current]
ARCCONF SETPRIORITY <Controller#> <REBUILD|EXPAND> <New Priority>

Parameters
Controller#
The controller number
Task ID
Task ID is the number of the task to be changed. Use arcconf getstatus to obtain the task ID. Omit this parameter to set the controller's global background task priority; that is, the execution priority for all tasks on the controller.
New Priority
LOW, MEDIUM, or HIGH. For REBUILD only: MEDIUMHIGH (if rapid rebuild priority is supported on the controller).
Current
Applies a global task priority change to running tasks. By default, a global priority change does not apply to running tasks.
REBUILD
Sets the controller's rebuild priority.
EXPAND
Sets the controller's capacity expansion (OCE) priority.

Examples
ARCCONF SETPRIORITY 1 <task_id> HIGH
ARCCONF SETPRIORITY 1 LOW CURRENT
ARCCONF SETPRIORITY 1 EXPAND LOW
SETPRIORITY 1 REBUILD MEDIUM

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]
ARCCONF SETSTATE <Controller#> DEVICE <Channel#> <Device#> <State> [ARRAY <AR#>] [noprompt] [nologs]
ARCCONF SETSTATE <Controller#> LOGICALDRIVE <LD#> OPTIMAL [ADVANCED <option>] [noprompt]

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

Syntax

ARCCONF SETSTATE <Controller#> DEVICE <Channel#> <Device#> <State> [LOGICALDRIVE <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.

**AR#**
Array number.

**State**

- **HSP**—Create a hot spare from a ready drive. Dedicates the HSP to one or more arrays 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#> ... 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
ARCCONF SETSTATE 1 DEVICE 0 0 HSP ARRAY 0
2.51 **arcconf setstatsdatacollection**

**Description**

Enables or disables statistics collection for a controller. To display the statistics, see `arcconf getlogs` on page 28.

**Syntax**

`ARCCONF SETSTATSDATAACCESSION <Controller#> Enable|Disable`

**Parameters**

- **Controller#**
  - The controller number
- **Enable**
  - Turns statistics collection on.
- **Disable**
  - Turns statistics collection off.

**Examples**

`ARCCONF SETSTATSDATAACCESSION 1 ENABLE`

---

2.52 **arcconf setvmcredential**

**Description**

Resets the Hypervisor login credentials for VMware Guest OSs running Remote ARCCONF.

**Note:** This command is available for VMware Guest OSs running Remote ARCCONF only.

**Syntax**

`SETVMCREDS <Esxip> <Esxcimomport> <Esxuserid> <Esxpassword> [noprompt]`

**Parameters**

- **Esxip**
  - Hypervisor IP address.
- **Esxcimomport**
  - Hypervisor CiMOM port number.
- **Esxuserid**
  - Hypervisor user name.
- **Esxpassword**
  - Hypervisor password.
Examples

ARCCONF SETVMCREDENTIAI 172.18.46.101 5989 root passwd

2.53 arcconf smp

Description

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

Syntax:

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

Parameters

Controller#
Controller number.

Connector# Channel# ID#
Connector ID, Channel ID and Device ID of the enclosure that contains the expander.

Expander#
Expander number on the controller (SMP target device).

PHY#
The PHY Identifier (valid only for Discover and PHY Error Log Request).

CommandType#

CommandType1:

- RGR - Report General Request
- RMR - Report Manufacturer Request

CommandType2:

- DR - Discover Request
- RPELR - Report PHY Error Log Request

ASCII
Displays the SMP response in ASCII format along with Hex formatted output.

Examples

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

2.54 arcconf task

Description

Performs a task on a logical drive, physical drive, or maxCache logical device. Uninitializes physical drives on a controller.
Syntax: General Usage

ARCCONF TASK
TASK START <Controller#> LOGICALDRIVE <LogicalDrive#> <options> [noprompt]
TASK STOP <Controller#> LOGICALDRIVE <LogicalDrive#>
TASK START <Controller#> DEVICE <Channel> <ID> <options> [noprompt]
TASK STOP <Controller#> DEVICE <Channel> <ID>
TASK START <Controller#> DEVICE ALL UNINITIALIZE

ARCCONF TASK
TASK START <Controller#> DEVICE <Channel> <ID> <options> [noprompt]
TASK START <Controller#> DEVICE ALL UNINITIALIZE
TASK STOP <Controller#> DEVICE <Channel> <ID>

ARCCONF 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 arcconf atapassword on page 17 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—comparse 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.
2.55  arcconf 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 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 arcconf setcontrollermode on page 46.

**Syntax:**

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

**Parameters**

- **Controller#**
  - Controller number.
- **Channel#**
  - The channel number of the device to be uninitialized.
- **Drive#**
  - The drive number of the device to be uninitialized.
- **ALL**
  - Uninitializes all physical devices on the controller.
- **nologs**
  - Suppresses log output for the command.

**Examples**

```
ARCCONF UNINIT 1 0 12 0 13
ARCCONF UNINIT 1 ALL
```

2.56  arcconf verifywrite

**Description**

Enables or disables the verify write feature on the controller.

**Syntax**

```
ARCCONF 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

<table>
<thead>
<tr>
<th>getconfig Command Field</th>
<th>Description</th>
<th>Possible Values/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Controller status</td>
<td>Overall status of the controller based on its resources.</td>
<td>optimal,failed,passive,removed,Signature error,inaccessible,Down,driver update required</td>
</tr>
<tr>
<td>Controller mode</td>
<td>Mode of the controller on which it is operating.</td>
<td>RAID(Expose RAW),Auto Volume, HBA,RAID(Hide RAW),Simple Volume, SmartHBA</td>
</tr>
<tr>
<td>Controller Cache Preservation</td>
<td>Data on DRAM of controller can be preserved.</td>
<td>Enabled, Disabled</td>
</tr>
<tr>
<td>Channel description</td>
<td>Technology type of the channel(s) on the specified controller.</td>
<td>SCSI,SATA,SAS,IDE,FIBRE,SATA_ON_SAS</td>
</tr>
<tr>
<td>Controller Model</td>
<td>Model number of the controller.</td>
<td>n/a</td>
</tr>
<tr>
<td>Controller Serial Number</td>
<td>Serial number of the controller.</td>
<td>n/a</td>
</tr>
<tr>
<td>Controller World Wide Name</td>
<td>Unique World Wide Name of the controller.</td>
<td>n/a</td>
</tr>
<tr>
<td>Controller Alarm</td>
<td>The state of the alarm on the controller.</td>
<td>Not available,Enabled,Disabled,Unknown</td>
</tr>
<tr>
<td>Physical Slot</td>
<td>Slot number of this controller</td>
<td>n/a</td>
</tr>
<tr>
<td>Temperature</td>
<td>Current temperature of the controller</td>
<td>degree Celsius and degree Fahrenheit</td>
</tr>
<tr>
<td>Installed Memory</td>
<td>Memory capacity of DRAM installed on controller</td>
<td>Memory in MB</td>
</tr>
<tr>
<td>Global task priority</td>
<td>The execution priority for all tasks running on the controller</td>
<td>Low,Medium,High</td>
</tr>
<tr>
<td>Performance Mode</td>
<td>An application-specific performance mode to improve I/O throughput based on the needs of your application.</td>
<td>Dynamic,OLTP/Database,DataCenter, User Defined</td>
</tr>
<tr>
<td>Host Bus type</td>
<td>Type of host expansion bus standard</td>
<td>Unknown,PCI,PCI-X,PCIE,NA</td>
</tr>
<tr>
<td>Host Bus Speed</td>
<td>Speed of host expansion bus standard in MHz</td>
<td>n/a</td>
</tr>
<tr>
<td>Host bus link width</td>
<td>Actual width bits /links depending on host bus type</td>
<td>n/a</td>
</tr>
<tr>
<td>Stayawake Period</td>
<td>The period during which disk drives on the controller always operate at their peak spin rate.</td>
<td>n/a</td>
</tr>
<tr>
<td>Spinup limit internal drives</td>
<td>Maximum number of internal disk drives (drives in an enclosure) that the controller may spin-up at the same time.</td>
<td>n/a</td>
</tr>
<tr>
<td>Spinup limit external drives</td>
<td>Maximum number of external disk drives (drives in an enclosure) that</td>
<td>n/a</td>
</tr>
<tr>
<td>getconfig Command Field</td>
<td>Description</td>
<td>Possible Values/Units</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Defunct disk drive count</td>
<td>Number of dead drives connected to the controller.</td>
<td>n/a</td>
</tr>
<tr>
<td>Logical devices/Failed/Degraded</td>
<td>The number of logical devices on the controller, number of failed logicals and number of degraded logical on the controller.</td>
<td>n/a</td>
</tr>
<tr>
<td>NCQ status</td>
<td>Lets SATA disk drives arrange commands into the most efficient order for optimum performance</td>
<td>Enabled, Disabled</td>
</tr>
<tr>
<td>Statistics data collection mode</td>
<td>Whether the statistics collection on the controller. The stats can be seen by arcconf getlogs command is enabled or not.</td>
<td>Enabled, Disabled</td>
</tr>
<tr>
<td>Global Physical Device Write Cache Policy</td>
<td>The write cache policy for all physical drives on a controller.</td>
<td>Enable All, Disable All, Drive Specific</td>
</tr>
<tr>
<td>Monitor Log Severity Level</td>
<td>The severity level of monitor logs captured from firmware.</td>
<td>Emergency, Alert, Critical, Error, Warning, Notification, Informational, Debug, Unknown</td>
</tr>
<tr>
<td>Global Max SAS Phy Link Rate</td>
<td>The maximum connection speed (or PHY link rate) for SAS devices on a controller.</td>
<td>6GBps, 12GBps, Unknown</td>
</tr>
<tr>
<td>Smart Poll</td>
<td>SMART poll setting on the controller.</td>
<td>Enabled, Disabled for RAW drives, Unknown</td>
</tr>
<tr>
<td>RAID Properties</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Copyback</td>
<td>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</td>
<td>Enabled, Disabled</td>
</tr>
<tr>
<td>Background consistency check</td>
<td>Lets maxView Storage Manager continually and automatically checks your logical drives for bad or inconsistent data once they're in use.</td>
<td>Enabled, Disabled</td>
</tr>
<tr>
<td>Background consistency check period</td>
<td>The background consistency check period in days</td>
<td>Days</td>
</tr>
<tr>
<td>Automatic Failover</td>
<td>Controls the rebuilding of a logical drive when a failed drive is replaced.</td>
<td>Enabled, Disabled</td>
</tr>
<tr>
<td>Error Tunable Profile</td>
<td>The current error tunable profile</td>
<td>Aggressive, Normal, Relaxed, User Defined</td>
</tr>
<tr>
<td>maxCache flush and fetch rate</td>
<td>To optimize the read cache performance of maxCache container</td>
<td>Valid range is 1 to 1000. 1-50 Low, 5 1-100 Medium, 101-1000 High</td>
</tr>
<tr>
<td>maxCache Read, Write Balance Factor</td>
<td>The read/write ratio is for invalidating data on the SSD. When the ratio is reached, the page is removed from</td>
<td>Valid range is 1 to 10</td>
</tr>
</tbody>
</table>
### getconfig Command Field

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
<th>Possible Values/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>the cache. Values range from 1-10 for each parameter.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>maxCache Dirty Page Threshold</td>
<td>Controls the amount cache space allocated to “dirty” data; that is, BIOS. The threshold value ranges from 1-100 (percent). Once the percentage of dirty pages crosses the threshold, the data are flushed to disk.</td>
<td>Valid range is 1 to 100</td>
</tr>
<tr>
<td>Controller BIOS Setting Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Runtime BIOS</td>
<td>Allows the controller to act as a bootable device.</td>
<td>Enabled,Disabled</td>
</tr>
<tr>
<td>Array BBS Support</td>
<td>The controller presents attached bootable devices up to the BIOS for boot device selection. This is relevant for logical arrays.</td>
<td>Enabled,Disabled</td>
</tr>
<tr>
<td>Physical Drives Displayed during POST</td>
<td>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.</td>
<td>Enabled,Disabled</td>
</tr>
<tr>
<td>Backplane Mode</td>
<td>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.</td>
<td>IBPI,SGPIO,N/A,Unknown</td>
</tr>
<tr>
<td>BIOS Halt on Missing Drive Count</td>
<td>The number of missing drives during POST. If =&gt; &quot;count&quot;, halt. Default is 8.</td>
<td></td>
</tr>
<tr>
<td>Controller Version Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIOS</td>
<td>Current version of BIOS flashed onto the controller</td>
<td>n/a</td>
</tr>
<tr>
<td>Firmware</td>
<td>Current version of Firmware flashed onto the controller</td>
<td>n/a</td>
</tr>
<tr>
<td>Driver</td>
<td>Current version of driver installed on the system</td>
<td>n/a</td>
</tr>
<tr>
<td>Boot Flash</td>
<td>Firmware version that will run on reboot</td>
<td>n/a</td>
</tr>
<tr>
<td>CPLD(Version/Flash Version)</td>
<td>CPLD version that is loaded and that is available in flash</td>
<td>n/a</td>
</tr>
<tr>
<td>SEEPROM(Version/Flash Version)</td>
<td>SEEPROM version that is loaded and that is available in flash</td>
<td>n/a</td>
</tr>
<tr>
<td>getconfig Command Field</td>
<td>Description</td>
<td>Possible Values/Units</td>
</tr>
<tr>
<td>-------------------------------------------------------------</td>
<td>------------------------------------------------------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Controller Cache Backup Unit Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall Backup Unit Status</td>
<td>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 70.</td>
<td>Not Present, Not Ready, Ready, Failed, Fatal, Preparing, Health Normal, Health Low, Health Dead, Invalid</td>
</tr>
<tr>
<td>Backup Unit Type</td>
<td>Type of back up unit connected to the controller or on controller</td>
<td>AFM700/700-LP</td>
</tr>
<tr>
<td>Supercap Status</td>
<td>Super cap attached to the backup unit. For more information, see Logical Drive, HDD, and Flash Backup System Status and Error Conditions on page 70.</td>
<td>Not Present, Not Ready, Ready, Failed, Fatal, Preparing, Health Normal, Health Low, Health Dead, Invalid</td>
</tr>
<tr>
<td>Current Temperature</td>
<td>Temperature of supercap</td>
<td>degrees Celsius</td>
</tr>
<tr>
<td>Threshold temperature</td>
<td>Temperature above which the supercap will become overheated</td>
<td>degrees Celsius</td>
</tr>
<tr>
<td>Life-time Temperature Recorded (Min/max)</td>
<td>Life-time min/max temperature recorded</td>
<td>degrees Celsius</td>
</tr>
<tr>
<td>Voltage (Present/Max)</td>
<td>Voltage in mV and max voltage in mV</td>
<td>Millivolts (mV)</td>
</tr>
<tr>
<td>Life-time Max Voltage Recorded</td>
<td>Life-time max Voltage of BU system</td>
<td>Millivolts (mV)</td>
</tr>
<tr>
<td>Current Drawn (Present/Max)</td>
<td>Current Drawn in mA present and max</td>
<td>Millivolts (mV)</td>
</tr>
<tr>
<td>Health</td>
<td>Health level of BU system</td>
<td>percentage</td>
</tr>
<tr>
<td>Charge level</td>
<td>Charge level of BU system</td>
<td>percentage</td>
</tr>
<tr>
<td>Estimated Life-time</td>
<td>Life-time estimate in years and months</td>
<td>n/a</td>
</tr>
<tr>
<td>Serial number</td>
<td>Super cap serial number</td>
<td>n/a</td>
</tr>
<tr>
<td>Learn Status</td>
<td>Calibration operation run by controller periodically to know status of battery</td>
<td>Not Ready, Idle, Pending, &quot;Active, Scheduled&quot;, &quot;Active Requested&quot;, &quot;Active, Manual&quot;, Passed, Failed, not Ready, Fatal, Unknown</td>
</tr>
<tr>
<td>Next Scheduled Learn Cycle</td>
<td>Time until next schedule learn cycle in hours</td>
<td>Hours</td>
</tr>
<tr>
<td>Present Capacitance</td>
<td>Capacitance in Farad</td>
<td>Farad</td>
</tr>
<tr>
<td>Connector Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connector Id</td>
<td>Connector number on the controller</td>
<td>n/a</td>
</tr>
<tr>
<td>Lane Information</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Channel ID</td>
<td>channel identifier for this lane</td>
<td>n/a</td>
</tr>
<tr>
<td>Device ID</td>
<td>device identifier for this lane</td>
<td>n/a</td>
</tr>
</tbody>
</table>
### getconfig Command Field Description Possible Values/Units

<table>
<thead>
<tr>
<th>getconfig Command Field</th>
<th>Description</th>
<th>Possible Values/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>SAS Address</td>
<td>SAS address for this lane</td>
<td>n/a</td>
</tr>
<tr>
<td>PHY Identifier</td>
<td>phy identifier for this lane</td>
<td>n/a</td>
</tr>
</tbody>
</table>

#### 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

<p>| 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,E,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 70. | • 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 |</p>
<table>
<thead>
<tr>
<th>getconfig Command Field</th>
<th>Description</th>
<th>Possible Values/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read-cache status</td>
<td>Whether the read cache setting is on or off</td>
<td>On , Off</td>
</tr>
<tr>
<td>Write-cache setting</td>
<td>Determines when data is stored on a disk drive and when the controller communicates with the operating system.</td>
<td>Enabled, Disabled</td>
</tr>
<tr>
<td>Write-cache status</td>
<td>Whether the write cache is enabled, disabled or enabled with backup support</td>
<td>wt, wb, wbb</td>
</tr>
<tr>
<td>maxCache write cache status</td>
<td>whether the maxcache write caching is enabled for logical drives or not</td>
<td>On , Off</td>
</tr>
<tr>
<td><strong>Physical Device information</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Device #</td>
<td>Drive number</td>
<td>n/a</td>
</tr>
<tr>
<td>State</td>
<td>current state of physical drive based on operations done on it.</td>
<td>Ready, online, Failed, standby, Hotspare, Rebuilding, Partitioned, Does not Exist, Unsupported, Copying back, RAW (Pass through), RAW (Smart HBA), Unknown</td>
</tr>
<tr>
<td>Block Size</td>
<td>Maximum size of data block on disk drives which are RAID members of logical device</td>
<td>512KB, 4K</td>
</tr>
<tr>
<td>Supported</td>
<td>Whether the connected drive is supported by the controller.</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Programmed Max Speed</td>
<td>The maximum transfer speed supported by this drive</td>
<td>Basic SCSI, Fast SCSI 2, Ultra SCSI, Ultra2 SCSI, Ultra 160, Ultra 320, SATA 1.5Gb/s, SATA 3.0Gb/s, SATA 6.0Gb/s, SATA 12.0Gb/s, SAS 1.5Gb/s, SAS 3.0Gb/s, SAS 6.0Gb/s, SAS 12.0Gb/s, SATA on SAS 1.5Gb/s, SATA on SAS 3.0Gb/s, SATA on SAS 6.0Gb/s, SATA on SAS 12.0Gb/s, Unknown</td>
</tr>
<tr>
<td>Transfer Speed</td>
<td>Negotiated link rate of the device connected</td>
<td>Basic SCSI, Fast SCSI 2, Ultra SCSI, Ultra2 SCSI, Ultra 160, Ultra 320, SATA 1.5Gb/s, SATA 3.0Gb/s, SATA 6.0Gb/s, SATA 12.0Gb/s, SAS 1.5Gb/s, SAS 3.0Gb/s, SAS 6.0Gb/s, SAS 12.0Gb/s, SATA on SAS 1.5Gb/s, SATA on SAS 3.0Gb/s, SATA on SAS 6.0Gb/s, SATA on SAS 12.0Gb/s, Unknown</td>
</tr>
<tr>
<td>Reported Channel, Device (T:L)</td>
<td>Virtual path/target/lun for device. Target (T) is the SCSI ID of the device, and LUN (L) corresponds to the SCSI LUN number.</td>
<td>n/a</td>
</tr>
<tr>
<td>Reported Location</td>
<td>Location of the connector and device relative to connector</td>
<td>n/a</td>
</tr>
<tr>
<td>Vendor</td>
<td>Physical device manufacturer name</td>
<td>n/a</td>
</tr>
<tr>
<td>Model</td>
<td>Product model name of physical device</td>
<td>n/a</td>
</tr>
</tbody>
</table>
### getconfig Command Field

<table>
<thead>
<tr>
<th>getconfig Command Field</th>
<th>Description</th>
<th>Possible Values/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Firmware</td>
<td>Firmware version of the physical device</td>
<td>n/a</td>
</tr>
<tr>
<td>Serial number</td>
<td>Serial number of physical device.</td>
<td>n/a</td>
</tr>
<tr>
<td>World wide name</td>
<td>Reported world wide name provided by manufacturer</td>
<td>n/a</td>
</tr>
<tr>
<td>Reserved Size</td>
<td>Reserved capacity of the drive</td>
<td>n/a</td>
</tr>
<tr>
<td>Used size</td>
<td>Used capacity of the drive</td>
<td>n/a</td>
</tr>
<tr>
<td>Unused size</td>
<td>Unused or available capacity of the drive</td>
<td>n/a</td>
</tr>
<tr>
<td>Total size</td>
<td>Sum of used, unused capacity of the drive</td>
<td>n/a</td>
</tr>
<tr>
<td>Write Cache</td>
<td>The write cache setting determines when data is stored on a disk drive and when the controller communicates with the operating system.</td>
<td>Write back, Write through</td>
</tr>
<tr>
<td>S.M.A.R.T</td>
<td>Self-Monitoring, Analysis, and Reporting Technology is supported or not</td>
<td>Yes, No</td>
</tr>
<tr>
<td>S.M.A.R.T Warnings</td>
<td>any SMART warning generated or not</td>
<td>Smart event from drive sense data, e.g. code = 0x0B</td>
</tr>
<tr>
<td>Power State</td>
<td>The power management options for a controller affect all logical drives on that controller.</td>
<td>Full RPM, Powered off, Reduced RPM</td>
</tr>
<tr>
<td>Supported Power States</td>
<td>These are power management states supported by different vendor hard drives</td>
<td>Full RPM, Powered off, Reduced RPM, Standby</td>
</tr>
<tr>
<td>SSD</td>
<td>The connected drive is SSD or not</td>
<td>Yes, No</td>
</tr>
<tr>
<td>Temperature</td>
<td>The recent temperature of the drive in celsius and fahrenheit.</td>
<td>n/a</td>
</tr>
<tr>
<td>NCQ status</td>
<td>Lets SATA disk drives arrange commands into the most efficient order for optimum performance. NCQ status is enabled or not</td>
<td>Enabled, Disabled</td>
</tr>
</tbody>
</table>

### Device Phy Information

<table>
<thead>
<tr>
<th>Device Phy Information</th>
<th>Description</th>
<th>Possible Values/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHY Identifier</td>
<td>Phy identifier for this device</td>
<td>n/a</td>
</tr>
<tr>
<td>SAS Address</td>
<td>SAS address for the device</td>
<td>n/a</td>
</tr>
<tr>
<td>Attached Phy Identifier</td>
<td>Attached phy identifier for this device</td>
<td>n/a</td>
</tr>
<tr>
<td>Attached SAS Address</td>
<td>Attached SAS address for this device</td>
<td>n/a</td>
</tr>
</tbody>
</table>

### Runtime Error Counters

<table>
<thead>
<tr>
<th>Runtime Error Counters</th>
<th>Description</th>
<th>Possible Values/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware error count</td>
<td>sense key 4 value</td>
<td>n/a</td>
</tr>
<tr>
<td>Medium error count</td>
<td>count of the number of medium errors</td>
<td>after drive encounters a medium error, FW will attempt bad block recovery</td>
</tr>
</tbody>
</table>
### getconfig Command Field

<table>
<thead>
<tr>
<th>Description</th>
<th>Possible Values/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parity error count</td>
<td>count of the number of parity errors</td>
</tr>
<tr>
<td>Link error count</td>
<td>count of the number of link errors</td>
</tr>
<tr>
<td>Aborted command count</td>
<td>count of the number of aborted commands</td>
</tr>
<tr>
<td>Smart warning count</td>
<td>count of the number of smart warnings on the device</td>
</tr>
<tr>
<td>maxCache information</td>
<td></td>
</tr>
<tr>
<td>maxCache device number</td>
<td>Always 100 for a maxCache device</td>
</tr>
<tr>
<td>maxCache device name</td>
<td>name of maxCache container</td>
</tr>
<tr>
<td>Block Size of member drives</td>
<td>Block size of SSD constituting the maxCache</td>
</tr>
</tbody>
</table>

- **SCSI parity error encountered i.e. sense code = 47h.** This will also consequently abort a command and increment the respective counter.
- **Link error count**
  - SMP Response frame received with errors e.g. zero frame size, exceeds max length, missing EOF, len mismatch with FIS type
  - 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**
  - 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**
  - n/a
- **maxCache information**
  - maxCache device number n/a
  - maxCache device name n/a
  - Block Size of member drives 512 Bytes, 4k, Unknown
<table>
<thead>
<tr>
<th>getconfig Command Field</th>
<th>Description</th>
<th>Possible Values/Units</th>
</tr>
</thead>
<tbody>
<tr>
<td>maxCache dirty status</td>
<td>Does the maxCache contain dirty data that is data that has not been committed to disk or is it clean</td>
<td>Dirty,Clean</td>
</tr>
<tr>
<td>RAID level</td>
<td>RAID level of maxcache</td>
<td>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</td>
</tr>
<tr>
<td>Background Coherency Check</td>
<td>Chooses to verify the maxCache Device without fixing inconsistent or bad data, or run a coherency check to compare valid pages of the maxCache Device with their corresponding logical drive storage.</td>
<td>Active Always,inactive,Unknown</td>
</tr>
<tr>
<td>Status of maxCache</td>
<td>state of maxCache device based on health of RAID members in the maxCache device</td>
<td>Does not exist,Failed,Optimal,Degraded,Logical Device Reconfiguring,&quot;Degraded,System&quot;,&quot;suboptimal,Fault tolerant&quot;,&quot;Suboptimal,Reconfiguring&quot;,&quot;Suboptimal,System&quot;,&quot;Degraded,Rebuilding&quot;,&quot;Flushing,&quot;Suboptimal,Rebuilding&quot;</td>
</tr>
<tr>
<td>Size</td>
<td>size of maxCache device in MB</td>
<td>n/a</td>
</tr>
<tr>
<td>maxCache write cache status</td>
<td>maxCache write caching status for each logical device in your storage space.</td>
<td>On,Protected,Disabled(No Battery Protection),Off(Non redundant maxCache Device),Off</td>
</tr>
<tr>
<td>Protected by Hot-Spare</td>
<td>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 maxCache device, and can subsequently be used to rebuild that maxCache device.</td>
<td>Yes,No</td>
</tr>
<tr>
<td>Failed stripes</td>
<td>any bad stripes or bad blocks for a logical</td>
<td>Yes,No</td>
</tr>
</tbody>
</table>
Logical Drive States

ARCCONF displays the following states for a logical drive.

<table>
<thead>
<tr>
<th>State</th>
<th>Description</th>
</tr>
</thead>
</table>
| Optimal                | • 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               | • The logical drive has been created. Redundancy information has not yet been built completely |
| Failed                 | • More member disks than supported by the redundancy level of the logical drive have failed. Logical Drive is taken offline |
| Clearing               | • 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 | • A logical drive that is morphing (eg, raid level migrations / online capacity expansion) |
| Suboptimal, Fault Tolerant | • 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 | • 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 | • 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               | • 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 | • A degraded logical drive that is morphing                                    |
| Degraded, Rebuilding   | • A degraded logical drive where rebuild has started on any remaining members  |
| Flushing               | • There is a flushing task on a logical drive                                 |
## HDD Error Statistics

ARCCONF displays the following HDD error statistics.

<table>
<thead>
<tr>
<th>Aborted Command Count</th>
<th>Types of aborted command instances:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• Timeout receiving OPEN_REJECT(Retry)</td>
</tr>
<tr>
<td></td>
<td>• Open error due to IO abort</td>
</tr>
<tr>
<td></td>
<td>• SCSI task management command was issued but the response was invalid</td>
</tr>
<tr>
<td></td>
<td>• Task management response has incorrect LUN</td>
</tr>
<tr>
<td></td>
<td>• Cannot communicate due to protocol mismatch</td>
</tr>
<tr>
<td></td>
<td>• Unable to successfully open a connection during the data phase of a command</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Link Failure count</th>
<th>Link failure characterized by the following scenarios:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• SMP Response frame received with errors eg, zero frame size, exceeds max length, missing EOF, len mismatch with FIS type</td>
</tr>
<tr>
<td></td>
<td>• Link timeout while transmitting frame, I/O could not be delivered to drive</td>
</tr>
<tr>
<td></td>
<td>• Encountered open Reject (Bad/Wrong Destination) ie, something is wrong with the topology</td>
</tr>
<tr>
<td></td>
<td>• Unable to deliver/issue command to drive, break received</td>
</tr>
<tr>
<td></td>
<td>• LUN reset or I_T nexus reset</td>
</tr>
<tr>
<td></td>
<td>• Open zone violation ie, requested phy is not in the same zone as initiator or zoning permissions are invalid</td>
</tr>
<tr>
<td></td>
<td>• No PHYS in the port or the port itself is down</td>
</tr>
<tr>
<td></td>
<td>• Encountered DMA transmit error</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Medium Error Count</th>
<th>• The drive has encountered a medium error and FW will attempt bad block recovery</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Parity Error Count</th>
<th>• SCSI parity error encountered i.e. sense code = 47h. This will also consequently abort a command and increment the respective counter.</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Smart Warning Count</th>
<th>• Smart event from drive sense data eg, code = 0x0B</th>
</tr>
</thead>
</table>

## Flash Backup Status

ARCCONF displays the following status for the Flash Backup system.

<table>
<thead>
<tr>
<th>General Backup Unit status</th>
<th>Preparing:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>• 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</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ready:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• The backup unit is enabled with the supercap charged and NAND flash prepared</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Not Ready:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Observed if the supercap is not present or has suffered a fatal error or if the BU temperature has exceeded allowed maximum</td>
</tr>
<tr>
<td>Supercapacitor status</td>
</tr>
<tr>
<td>-----------------------</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

**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
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