## Revision History

<table>
<thead>
<tr>
<th>Issue</th>
<th>Issue Date</th>
<th>Details of Change</th>
</tr>
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<tbody>
<tr>
<td>1.06</td>
<td>May 15, 2014</td>
<td>Adaptec Firmware/BIOS/Drivers/Utilities Version 1.06</td>
</tr>
</tbody>
</table>
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Adaptec by PMC Product Support

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

Note: The phone numbers below are subject to change. Please visit the Support section of www.adaptec.com for the most up to date contact information.

Technical Support Identification (TSID) Number

• Before contacting Technical Support, you need your product unique TSID number. The TSID number identifies your product and support status.
• The TSID number is included on a white, bar-coded label, like this example:

![TSID example image]

• It’s recommended that you register your product so that you have easy access to your TSID when contacting product support.

Self Help and Support in English

• Search the Adaptec Support Knowledgebase (ASK) at ask.adaptec.com for articles, troubleshooting tips, and frequently asked questions for your product.
• For support via e-mail, submit your question at ask.adaptec.com.
• To speak with a Technical Support Specialist, call +1 408 934 7274 or +49 89 4366 5544 or +44 845 266 8773.

Technische Informationen und Support in Deutsch

• Besuchen Sie unsere Webseite www.adaptec.com/de-de
• Suchen Sie in der Adaptec Support Knowledgebase (ASK) unter ask-de.adaptec.com nach Artikeln, Tipps zur Fehlerbehebung und häufig gestellten Fragen zu Ihrem Produkt.
• Support per Email erhalten Sie unter ask-de.adaptec.com.
• Für telefonischen Support wählen Sie +49 89 4366 5522.

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日本語での技術情報とサポート

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• Eメールでのサポートには ask.adaptec.co.jp から質問を送ってください。
Information Technique et d'assistance en Français

- Visitez notre site Web à l'adresse www.adaptec.com/fr-fr.
- Rechercher dans le base de connaissances Adaptec (ASK) ask-fr.adaptec.com pour des articles, conseils de dépannage et les questions fréquemment posées pour votre produit.
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Legal Department
1380 Bordeaux Drive
1 Getting Started with the Command Line Utility

This chapter explains how your Adaptec by PMC® RAID controllers support the use of the ARCCONF command line utility. This utility allows you to:

• Create and delete logical drives
• Display and modify configuration settings
• Copy configurations from one computer to another
• Recover from a failed physical device and rebuild an affected logical drive
• Flash new firmware and BIOS onto the controller
• Enable the controller to check the removal and connection of any disk drives
• Provides access to the status and event logs of a controller
• Isolate problems and determine their causes

Installing the Command Line Utility

You can install ARCCONF with the Adaptec maxView Storage Manager application. Alternatively, 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 with maxView Storage Manager. (For more information about maxView Storage Manager, see the maxView Storage Manager User’s Guide.)

**Note:** On FreeBSD systems, you must use ARCCONF to perform storage management tasks. FreeBSD does not support the maxView Storage Manager GUI. For more information, see Downloading the Installation Packages on page 12 and Installing on FreeBSD on page 14.

Downloading the Installation Packages

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

1. Open a browser window, then type `start.adaptec.com` in the address bar.
2. Select your RAID controller family (Series 7, Series 8, and so on) and controller model.
3. Select Storage Manager Downloads, then select the appropriate installer package from the list; for instance, maxView Storage Manager for Windows x64 or maxView Storage Manager for Linux.

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

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

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

6. Continue with the installation instructions for your operating system.
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 12 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>
<tr>
<td>Windows 32-bit</td>
<td>setup_asm_x86.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.
   
   c) User Name default: Administrator
   
   d) Operating system password.

5. Click **OK** on the password verification window and on the CIM Server and Web Server port number verification window.

6. In the Features window, select **GUI and Agent** and **CLI Tools**. Optionally, select **maxCachePlus**, then click **Next**.

   **Note:** maxCache Plus is supported on qualifying Adaptec Series Q controllers only. See the Readme for a complete list.

7. Follow the on-screen instructions to complete the installation.

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

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

1. In a shell window, change to the directory where the Linux installer package is located (see Downloading the Installation Packages on page 12 for details).

2. To install maxView Storage Manager with maxCache Plus support, run the maxCache Plus installation script, `install.sh`; otherwise skip to Step [3].

   ```bash
   chmod +x install.sh
   ./install.sh
   ```

   If the installer detects a qualifying Adaptec Series Q controller and one of the supported Linux operating systems, it installs the maxCache Plus driver software, then it continues with the maxView Storage Manager installation. (See the Readme for a complete list of controllers and operating systems that support maxCache Plus.)

3. To install maxView Storage Manager without maxCache Plus support, run the .bin file for your operating system version:

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux 64-bit</td>
<td>./StorMan-1.02.x86_64.bin</td>
</tr>
<tr>
<td>Linux 32-bit</td>
<td>./StorMan-1.02.i386.bin</td>
</tr>
</tbody>
</table>

4. When prompted for configuration details, enter the following:

   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.

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 12 for details).

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

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux 64-bit</td>
<td>dpkg -i StorMan-1.02-XXXXX_amd64.deb</td>
</tr>
<tr>
<td>Linux 32-bit</td>
<td>dpkg -i StorMan-1.02-XXXXX_i386.deb</td>
</tr>
</tbody>
</table>

3. 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.

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 Installation Packages on page 12 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.

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 Installation Packages on page 12 for details).

2. Verify that the file has 'execute' privilege.

Installing on VMware ESX 4.1

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

1. Copy the following files from the installer download location to your local ESX 4.1 /tmp directory (see Downloading the Installation Packages on page 12 for details):

   - vmware-esx-provider-arccconf.vib
   - vmware-esx-provider-arcsmis.vib

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

2. Stop operations.
/etc/init.d./sfcbd-watchdog stop

3. Check for an existing installation of arcconf.
   esxupdate --vib-view query | grep arcconf

4. Remove the existing installation of arcconf.
   esxupdate -b < arcconf module name > --maintenancemode remove
   When the package is removed, you receive the message "The update completed successfully, but
   the system needs to be rebooted for the changes to be effective".

5. Check for an existing installation of arcsmis.
   esxupdate --vib-view query | grep arcsmis

6. Remove the existing installation of arcsmis.
   esxupdate -b < arcsmis module name > --maintenancemode remove
   When the package is removed, you receive the message "The update completed successfully, but
   the system needs to be rebooted for the changes to be effective."

7. Reboot the system.

8. Stop operations.
   /etc/init.d./sfcbd-watchdog stop

9. Install the arcconf package.
   esxupdate -b /tmp/vmware-esx-provider-arcconf.vib --nodeps --nosigcheck
   --maintenancemode update
   When the package is installed, you receive the message "The update completed successfully, but
   the system needs to be rebooted for the changes to be effective."

10. Install the arcsmis package.
    esxupdate -b /tmp/vmware-esx-provider-arcsmis.vib --nodeps --nosigcheck
    --maintenancemode update
    When the package is installed, you receive the message "The update completed successfully, but
    the system needs to be rebooted for the changes to be effective."

11. Reboot the system.

12. Continue the installation with Installing on a Guest Operating System on page 16.

Installing on VMware ESXi 5.x

Use the following procedure to install the .vib files for VMware ESXi 5.x. 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 your local ESXi 5.x /tmp directory
   (see Downloading the Installation Packages on page 12 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. Stop operations.
   /etc/init.d./sfcbd-watchdog stop

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

4. Remove the existing arcconf package.
   esxcli software vib remove -n arcconf
   When the package is removed, you receive the message "Reboot Required: false."

5. Check for an existing installation of arcsmis.
   esxcli software vib list | grep arcsmis

6. Remove the existing arcsmis package.
esxcli software vib remove -n arcsmis
When the package is removed, you receive the message "Reboot Required: false."

7. Set the acceptance level if this is the first installation of arcconf and arcsmis:
esxc1i software acceptance set --level=CommunitySupported

8. Install the arcconf package.
esxc1i software vib install --maintenance-mode --no-sig-check -v /tmp/vmware-esx-provider-arcconf.vib
When the package is installed, you receive the message "Reboot Required: false."

9. Install the arcsmis package.
esxc1i software vib install --maintenance-mode --no-sig-check -v /tmp/vmware-esx-provider-arcsmis.vib
When the package is installed, you receive the message "Reboot Required: false."

10. Reboot the system.

11. Continue the installation with Installing on a Guest Operating System on page 16.

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 Installation Packages on page 12 for details).

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

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>XenServer 64-bit</td>
<td>rpm -i StorMan-1.02-XXXXX_amd64.rpm</td>
</tr>
<tr>
<td>XenServer 32-bit</td>
<td>rpm -i StorMan-1.02-XXXXX_i386.rpm</td>
</tr>
</tbody>
</table>

3. Continue with Installing on a Guest Operating System on page 16.

Installing on a Guest Operating System

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

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 Installation Packages on page 12 for details).

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

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows GOS 64-bit</td>
<td>setup_maxview_gos_x64.exe</td>
</tr>
<tr>
<td>Windows GOS 32-bit</td>
<td>setup_maxview_gos_x86.exe</td>
</tr>
</tbody>
</table>

The Installation wizard opens.

3. Choose the hypervisor type (ESXi Server or XenServer), then click Next.

4. Enter the following configuration details:
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 Installation Packages on page 12 for details).

2. Run the installer for your operating system version.

<table>
<thead>
<tr>
<th>Options</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Linux GOS 64-bit</td>
<td>./Storman-1.06.GOS86_64.bin</td>
</tr>
<tr>
<td>Linux GOS 32-bit</td>
<td>./Storman-1.06.GOS32.bin</td>
</tr>
</tbody>
</table>

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.

Starting the Command Line Utility

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

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

   where Install_dir is the directory where the utility is installed.

2. To see a list of available commands, type ARCCONF at the prompt.
Using the Command Line Utility

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

Table 1: ARCCONF Batch Environments

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

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

The return values for each command are the same:

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

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

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

ARCCONF Commands

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

Table 2: ARCCONF Commands

<table>
<thead>
<tr>
<th>atapassword</th>
<th>getsmartstats</th>
</tr>
</thead>
<tbody>
<tr>
<td>consistencycheck</td>
<td>getstatus</td>
</tr>
<tr>
<td>copyback</td>
<td>getversion</td>
</tr>
<tr>
<td>create</td>
<td>identify</td>
</tr>
<tr>
<td>delete</td>
<td>imageupdate</td>
</tr>
<tr>
<td>driverupdate</td>
<td>key</td>
</tr>
<tr>
<td>expanderlist</td>
<td>modify</td>
</tr>
<tr>
<td>failover</td>
<td>phyererrorlog</td>
</tr>
<tr>
<td>getconfig</td>
<td>playconfig</td>
</tr>
<tr>
<td>getlogs</td>
<td>preservecache</td>
</tr>
<tr>
<td>getperform</td>
<td>rescans</td>
</tr>
<tr>
<td>resetstatisticscounters</td>
<td>romupdate</td>
</tr>
<tr>
<td>saveconfig</td>
<td>saveoverviewarchive</td>
</tr>
<tr>
<td>savesupportarchive</td>
<td>setalarm</td>
</tr>
<tr>
<td>setbiosparams</td>
<td>setcache</td>
</tr>
<tr>
<td>setconfig</td>
<td>setcontrollermode</td>
</tr>
<tr>
<td>setcustommode</td>
<td>setmaxcache</td>
</tr>
<tr>
<td>setname</td>
<td>setncq</td>
</tr>
<tr>
<td>setphy</td>
<td>setperform</td>
</tr>
<tr>
<td>setpower</td>
<td>setpriority</td>
</tr>
<tr>
<td>setstate</td>
<td>setstatsdatacollection</td>
</tr>
<tr>
<td>setvmcredential</td>
<td>setvmcredential</td>
</tr>
<tr>
<td>task</td>
<td>uninit</td>
</tr>
</tbody>
</table>

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

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

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

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

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

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

arcconf consistencycheck

Description
Toggles the background consistency check modes of the controller.

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

Parameters
Controller#
Controller number.

On
Turns background consistency check on.

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

Noprompt
Optional parameter that suppresses the confirmation prompt.

Examples
ARCCONF CONSISTENCYCHECK 1 PERIOD 30
ARCCONF CONSISTENCYCHECK 1 OFF
arcconf copyback

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

Syntax
ARCCONF COPYBACK <Controller#> <ON|OFF>

Parameters
Controller#
The controller number
On enables the copyback feature
Off disables the copyback feature

Examples
ARCCONF COPYBACK 1 ON

arcconf create

Description
Creates a new logical drive, maxCache Container, or JBOD and, optionally, enables logical drive read caching, write caching, and maxCache SSD caching. You must provide the channel and device ID of the physical devices.
On redundant logical drives, ARCCONF performs autosynchronization.
ARCCONF presents JBODs as physical devices, not logical drives.

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

Parameters
Controller#
The controller number.
Logical Drive
Logical Drive indicates the logical drive stripe size with the following options:

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

  This argument is valid only if MaxCacheWriteCache is ION.

  **Note:** For more information about write cache policy, see `arcconf setmaxcache` on page 41.

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

RAID#
Indicates the RAID level for the new logical drive: 0, 1, 1E, 10, 5, 5E, 50, 6, 60, and volume are supported. For maxCache, 0, 1, 1E, and Simple_Volume are supported.

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

Rvolume
RAID level for a RAID volume logical drive.
LD#
Logical drive numbers for two or more logical drives to be concatenated into the RAID volume.

Noprompt
No prompt for confirmation

Examples

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

arcconf delete

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

Syntax

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

Parameters

Controller#
Controller# is the controller number

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

LogicalDrive|JBOD ALL
Deletes all logical drives or JBODs.

MAXCACHE
Deletes the maxCache Container.

Noprompt
Optional parameter that suppresses alert messages.

Examples

ARCCONF DELETE 1 LOGICALDRIVE 1 2 3
ARCCONF DELETE 1 JBOD ALL
**arcconf driverupdate**

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

*Note:* This command is available only on Windows systems.

**Syntax**

```
ARCCONF DRIVERUPDATE <DirName>
```

**Parameters**

*Driverupdate <DirName>*
Directory path containing the driver that you want to update.

**Examples**

```
ARCCONF DRIVERUPDATE C:\WINDOWSALL
```

**arcconf expanderlist**

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

**Syntax**

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

**Parameters**

*Controller#*
Controller number.

**Examples**

```
ARCCONF EXPANDERLIST 1
```
arcconf failover

Description

Turns automatic failover on and off.

Syntax

ARCCONF FAILOVER <Controller#> <on|off>

Parameters

Controller#
The controller number.

On
Turns the controller failover mode on.

Off
Turns the controller failover mode off.

Examples

ARCCONF FAILOVER 1 ON

arcconf getconfig

Description

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

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

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

Syntax

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

Parameters

Controller#
Controller number
AD/LD/PD/AL

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

Examples

ARCCONF GETCONFIG 1 AD
ARCCONF 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 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-IO Read and Write times and IO Completion Read and Write times
- A log of cache statistics for one or all logical drives

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#> DEVICE <clear> <ErrorType#> [<Channel# ID#>|ALL] [tabular] [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
Type 3
One of the following:
• CACHE—cache statistics data for all or a single logical drive

Error Type
One of the following:
• 1 - Parity Error Counter
• 2 - Link Failure Counter
• 3 - Hardware Error Counter
• 4 - Aborted Commands Counter
• 5 - Medium Error Counter
• 6 - SMART Warning Counter

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

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

Tabular
Displays the log or statistics in tabular format.

Examples

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

arcconf getperform

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

Syntax

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

Parameters

Controller#
Controller number.

Performance Mode
One of the following:
• 1 - Default/Dynamic mode
• 2 - OLTP/Database
• 3 - Big Block Bypass mode
• 4 - User defined mode

Save
Saves the performance mode parameters in a file.
Filename
Name of the file in which to save the parameters. If not specified, the default filename is PerformanceMode.cfg.

Nologs
Suppresses creation of logs for this command.

Examples

ARCCONF GETPERFORM 1 2

arcconf getsmartstats

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

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

Syntax
ARCCONF GETSMARTSTATS <Controller#> [Tabular]

Parameters

Controller#
Controller number.

Tabular
Creates output in tabular format.

Examples

ARCCONF GETSMARTSTATS 1
ARCCONF GETSMARTSTATS 1 TABULAR

arcconf getstatus

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

Note:

1. GETSTATUS reports currently active operations for both ARCCONF commands and commands issued from 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#>

Parameters

Controller#
Controller# is the controller number

Examples

ARCCONF GETSTATUS 1

arcconf getversion

Description

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

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

Syntax

ARCCONF GETVERSION (use this for information on all controllers)
ARCCONF GETVERSION <Controller#> (use this for information on a specific controller)

Parameters

Controller#
Controller# is the controller number

Examples

ARCCONF GETVERSION

arcconf identify

Description

Identifies a physical or logical device by blinking its LEDs.

Syntax

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

Parameters

Controller#
Controller number

Channel/ID
Number of the logical drive to be identified
**Channel#**
Channel number for the device to be identified

**Device#**
Device number for the device to be identified

**Examples**

```
ARCCONF IDENTIFY 1 DEVICE 0 0
ARCCONF IDENTIFY 1 ALL
```

**arcconf imageupdate**

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

**Syntax: Physical Device Usage**

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

**Parameters**

**Controller#**
Controller number.

**Channel#**
Channel number of the device to be updated.

**ID#**
Device number of the device to be updated.

**ChunkSize#**
Chunk size, in bytes, to be used to update the firmware.

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

**Filename**
Name of the firmware update file.

**Mode#**
Firmware update mode.
Valid values for physical devices are:
- 3-(SATA) Download with offsets and save image for immediate and future use
- 7-(SAS) Download microcode with offsets, save, and activate

**Noprompt**
Optional parameter that suppresses alert messages.

**Examples**

```
ARCCONF IMAGEUPDATE 1 DEVICE 0 83 16384 ados.lod 3
```
**arcconf key**

**Description**
Loads a feature key onto an Adaptec controller.

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

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

**Examples**
```
ARCCONF KEY 1 SET ABCD EFGH IJKL MNOP QRST UVWX
```

**arcconf modify**

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

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

**Parameters**
- **Controller#**
  The controller number.
- **From**
  Indicates that the logical drive to be modified will follow
- **LogicalDrive#**
  The logical drive number
TO
Indicates that the modifications will follow
Options:
  • Stripesize—indicates the stripe size in KB. Options are 16, 32, 64, 128, 256, 512, and 1024. the default is 256KB.
  • init_priority—is the priority level of the modification. Options are low, med, and high.
  • Legs— is the number of subarrays for a RAID level-50 or RAID level 60 array. Possible values are 2-16 legs and 3-16 drives/leg (to 48 drives maximum).
Size is one of the following values:
  • MAX indicates that you want to use all available space on the disk.
  • Desired size in MB.
RAID# is the RAID level for the logical drive 0, 1, 5, 5EE, or 10.
  **Note:** The CHANNEL# and DRIVE# parameters is the list of devices that will contain the target modification object. Channel and Drive are repeatable parameters.
Channel# is the channel number for the device.
Drive# is the device_ID (device number) for the device.
Noprompt is an optional parameter that overrides the user prompt.

**Example**

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

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

**Syntax**

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

**Parameters**

**Controller#**
Controller number.

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

**ExpanderID#**
Expander identifier.

**PHY#**
PHY identifier.

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

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

arcconf playconfig

Description

Note: This command is supported on Windows systems only.

Configures a controller using a XML server template file produced by the SAVECONFIG command (see arcconf saveconfig on page 35). Use this command to deploy the same controller configuration on multiple servers in your storage space.

Note:

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

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

Parameters

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

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

FORCE
Forces deployment of the server even if the controller does not support all features, or the drive capacity does not match the configuration in the input XML file. Use FORCE ALL to force deployment of all features; use FORCE LOGICALSIZE to force deployment of just the logical drives.
arccomp 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: With cache preservation enabled, the controller enters the Cache Preserved state. You cannot enable maxCache (SSD caching) on a controller in the Cached Preserved state. In addition, the following operations are not permitted:
- 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

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 arccconf getstatus on page 27 for more information.

Syntax

ARCCONF RESCAN <Controller#>

Parameters

Controller#
The controller number

Examples

ARCCONF RESCAN 1

arcconf resetstatisticscounters

Description

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

Syntax

ARCCONF RESETSTATISTICSCOUNTERS <Controller#>

Parameters

Controller#
The controller number

Examples

ARCCONF RESETSTATISTICSCOUNTERS 1

arcconf romupdate

Description

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

Note:

1. This command is supported in Windows and Linux only.

Syntax

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

Controller#
The controller number

BaseName
The name of the ROM image basename or the fully qualified name if you have a set of controller ROM images.

Note: All UFI files must be in the same directory prior to invoking ARCCONF.

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

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

Noprompt
An optional parameter that suppresses the confirmation prompt.

Examples

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

arcconf saveconfig

Description

Note: This command is supported on Windows systems only.

Saves the controller configuration to a XML server template file, including the controller type, operational settings, physical drive size, logical drive size, RAID level, and more. Use this file with the PLAYCONFIG command to deploy the same controller configuration to other servers in your storage space; see arcconf playconfig on page 32 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 [Input XML File] [LogFile]

Parameters

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

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

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

arcconf savesupportarchive

Description

Saves configuration and status information to help Adaptec Customer Support diagnose a problem with your system. Saved information includes (but is not limited to) device logs, drive logs, event logs, error logs, controller logs, history logs, and SSD SMART statistics. (For more information about SMART statistics, see `arcconf getsmartstats` on page 27.)

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

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

Syntax

ARCCONF SAVESUPPORTARCHIVE

Parameters

None.

Examples

ARCCONF SAVESUPPORTARCHIVE
arcconf setalarm

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

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

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

Examples
```
ARCCONF SETALARM 1 TEST
ARCCONF SETALARM 1 SILENCE
```

arcconf setbiosparams

Description
Changes select BIOS settings, including:
- Array BBS support
- 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
```
SETBIOSPARAMS <Controller#> RUNTIMEBIOS [enable | disable]
SETBIOSPARAMS <Controller#> ARRAYBBSSUPPORT [enable | disable]
SETBIOSPARAMS <Controller#> DISPLAYEDONPOST [enable | disable]
SETBIOSPARAMS <Controller#> BACKPLANEMODE <mode>
SETBIOSPARAMS <Controller#> BIOSHALTONMISSINGDRIVECOUNT <count>
```

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. Default is 8.</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 setcache

Description

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

Syntax

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

Parameters

Controller#
The controller number

LogicalDrive#
The number of the logical drive whose cache will be altered

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

Channel/ID
Lists the space-delimited channel number and device number pairs for each device.
Physical mode

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

Policy

- Enable - write through for all physical drives
- Disable - write back for all physical drives

Examples

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

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

arcconf setcontrollermode

Description

Sets the controller operating mode to one of the following:

- RAID: Expose RAW (default)—All RAID functions of the controller are enabled. Attached drives without 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 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 Adaptec meta-data and without OS partitions, are automatically configured as Simple Volumes (single drives with Adaptec meta-data), with these settings:
  - Controller read caching is set to “Enabled” for rotating media.
  - Controller write caching is set to “Enabled (write-back)” when protected by battery/ZMM” for rotating media.
• 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 Containers, 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 43 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 Adaptec meta-data attached to the controller. Uninitialize the drives before changing to HBA mode (see `arcconf uninit` on page 49). 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 Containers, and hot spare drives (if any).

**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

**nologs**
Suppresses log output for the command.

**Examples**

```
ARCCONF SETCONTROLLERMODE 1 2
ARCCONF SETCONTROLLERMODE 1 0
ARCCONF SETCONTROLLERMODE 1 4
```
arcconf setmaxcache

Description

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

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

Syntax: Read Caching

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

Syntax: Write Caching

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

General Usage

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

Parameters

**Controller#**

The controller number.

**LogicalDrive#**

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

**Channel#**

The channel number for the SSD.

**Device#**

The device number for the SSD.

**Read#/Write#**

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

**FlushAndFetchRate#**

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

Note: The lower the rate the longer the page is kept on the SSD before it is flushed from the cache.
**dirtyPageThreshold**
Controls the amount cache space allocated to “dirty” data; that is, data that has not been committed to disk. The threshold value ranges from 1-100 (percent). Once the percentage of dirty pages crosses the threshold, the data are flushed to disk.

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

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

**Clear**
Clears the maxCache pool.

**Examples**

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

**arcconf setname**

**Description**
Renames a logical drive.

**Syntax**
```
ARCCONF SETNAME <Controller#> LOGICALDRIVE <LogicalDrive#> <New Name>
```

**Parameters**

- **Controller#**
  Controller number

- **LogicalDrive#**
  The number of the logical drive to be renamed

- **New Name**
  The new name of the logical drive

**Examples**

```
ARCCONF SETNAME 1 LOGICALDRIVE 1 BACKUP_A
```
**arcconf setncq**

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

**Syntax**
```
ARCCONF SETNCQ <Controller#> ENABLE|DISABLE
```

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

**Examples**
```
ARCCONF SETNCQ 1 ENABLE
```

**arcconf setperform**

**Description**
Changes controller settings based on the application type.

**Syntax**
```
ARCCONF SETPERFORM <Controller#> <Performance Mode> [nologs]
```

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

**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>
<tr>
<td>4 (User-Defined)</td>
<td>User-defined performance mode. Contact Adaptec support for more information.</td>
</tr>
</tbody>
</table>

**Examples**
```
ARCCONF SETPERFORM 1 2
ARCCONF SETPERFORM 1 3
```
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

arcconf setpower

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

Syntax
ARCCONF SETPOWER <Controller#> Stayawake DISABLE| <startime> <endtime>
ARCCONF SETPOWER <Controller#> Spinup <internal#> <external#>

Parameters
Controller#
The controller number

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

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

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

dertime
Specifies the end of the stayawake period, in the form HHMM (24-hour format).
Spinup
Sets the spin-up limits for the controller—the maximum number of drives that the controller may spin up at one time.

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

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

**LogicalDrive#**
The logical drive number.

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

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

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

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

**Examples**

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

**arcconf setpriority**

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

**Syntax**

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

**Parameters**

**Controller#**
The controller number

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

**New Priority**
LOW, MEDIUM, or HIGH.
**Current (keyword)**
Applies a global task priority change to running tasks. By default, a global priority change does not apply to running tasks.

**Examples**

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

**arcconf setstate**

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

**Syntax**

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

```
ARCCONF SETSTATE <Controller#> LOGICALDRIVE <LD#> OPTIMAL [ADVANCED <option>]
[noprompt]
```

**Parameters**

- **Controller#**
The controller number

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

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

- **LD#**
Logical drive number.

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

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

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

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

**Examples**

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

**Description**

Enables or disables statistics collection for a controller. To display the statistics, see `arcconf getlogs` on page 25.

**Syntax**

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

**Parameters**

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

**Examples**

```
ARCCONF SETSTATSDATACOLLECTION 1 ENABLE
```

**arcconf setvmcredential**

**Description**

Resets the Hypervisor login credentials for VMware Guest OSs.

**Syntax**

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

**Parameters**

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

**Examples**

```
ARCCONF SETVMCREDENTIAL 172.18.46.101 5989 root passwd
```
**arcconf task**

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

**Syntax: General Usage**
```
ARCCONF TASK
TASK START <Controller#> LOGICALDRIVE <LogicalDrive#> <options> [noprompt]
TASK STOP  <Controller#> LOGICALDRIVE <LogicalDrive#>
TASK START <Controller#> DEVICE <Channel> <ID> <options> [noprompt]
TASK STOP  <Controller#> DEVICE <Channel> <ID>
```

**Syntax: maxCache Usage**
```
ARCCONF TASK
TASK START <Controller#> MAXCACHE COHERENCYCHECK [ONCE|ALWAYS]
TASK START <Controller#> MAXCACHE <VERIFY_FIX|VERIFY>
TASK STOP  <Controller#> MAXCACHE
```

**Parameters**

- **Controller#**
The controller number

- **LogicalDrive#**
Number of the logical drive in which the task is to be performed
  - Logical drive options:
    - `verify_fix (Verify with fix)`—verifies the logical drive redundancy and repairs the drive if bad data is found.
    - `verify`—verifies the logical drive redundancy without repairing bad data.
    - `clear`—removes all data from the drive.
  - Physical device options:
    - `verify_fix`—verifies the disk media and repairs the disk if bad data is found.
    - `verify`—verifies the disk media without repairing bad data.
    - `clear`—removes all data from the drive.
    - `initialize`—returns a drive to the READY state (erases the metadata).
    - `secureerase [password]`—removes all data from the drive in a secure fashion to prevent any possible recovery of the erased data. See `arcconf atapassword` on page 19 for details about setting the password.

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

**Examples**
```
ARCCONF TASK START 1 LOGICALDRIVE 1 VERIFY
ARCCONF TASK START 1 DEVICE 0 0 INITIALIZE
ARCCONF TASK START MAXCACHE COHERENCYCHECK ONCE
```
arcconf uninit

Description
Uninitializes one or more physical drives. The uninitialize command clears 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 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 39.

Syntax:

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

Parameters

Controller#
Controller number.

Channel#
The channel number of the device to be uninitialized.

Drive#
The drive number of the device to be uninitialized.

ALL
Uninitializes all physical devices in the Raw or Ready state.

nologs
Suppresses log output for the command.

Examples

ARCCONF UNINIT 1 0 12 0 13
ARCCONF 1 ALL