
README.TXT

Adaptec ASR-7805/ASR-7805Q/ASR-71605/ASR-71605Q/ASR-71605E/ASR-71685/ASR-72405 SAS/SATA RAID Controllers
AFM-700 Flash Backup Unit

NOTE: All Adaptec by PMC products are UL listed and for use only with UL listed ITE.

as of May 2, 2013

Please review this file for important information about issues and errata that were discovered after completion of the standard product documentation. In the case of conflict between various parts of the documentation set, this file contains the most current information.

The following information is available in this file:

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1. New Features in this Release

- Dual firmware flash image support (Adaptec Series 7 controllers only)

  Adds redundancy to controller firmware, with support for active and passive images. Built-in logic determines the "right time" to update from passive to active, either at shutdown or boot up, and is designed to protect against image corruption or data loss due to power failure during image update. If the update occurs in the boot path, a server reboot is expected. Additionally, you must be running the latest drivers.

  NOTE: This feature is enabled only when upgrading from and to a firmware version that supports dual firmware images. For customers updating from an earlier Adaptec release (2012.3 or 2012.4MR), there is no change in behavior. The firmware image is updated in one stage.

- Background controller rescan

  Controller rescan runs in the background, asynchronously, in BIOS, ARCCONF, and maxView Storage Manager. 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. When the rescan is finished, maxView Storage Manager displays a rescan complete event. Rescan status can also be obtained with ARCCONF getstatus.

- AFM-700 supercapacitor lifetime estimation monitoring

  Enhanced supercapacitor health monitoring information in BIOS and command line (ARCCONF getconfig), including charge level, max voltage, and estimated life. The AFM-700 serial number is also displayed.

- Bugfixes

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2. Software and Documentation

2.1 Driver & Utility Software

- Adaptec Firmware/BIOS/Drivers/Utilities Version 1.02

- Adaptec maxView Storage Manager Version 1.02

  NOTE: The latest versions of firmware, BIOS, driver software and utilities can be downloaded from the Adaptec Web Site at www.adaptec.com.

- Drivers on this DVD

  The drivers on this DVD have been tested and certified on the following operating systems. In general, you can load the drivers on out-of-box operating system versions, the latest service pack, or software update. Compatibility issues may be seen with untested OS versions.

  Windows Drivers:

  o Windows Server 2012, 2008, 32-bit and 64-bit
  o Windows Server 2008 R2, 64-bit
  o Windows Storage Server 2008 R2 (all versions)
  o Windows SBS 2011 (all versions)
  o Windows 7, Windows 8, 32-bit and 64-bit

  Linux Drivers:

  o Red Hat Enterprise Linux 6.3, 5.9, IA-32 and x64
  o SuSE Linux Enterprise Server 11, 10, IA-32 and x64
  o Debian Linux 6.0, IA-32 and x64
  o Ubuntu Linux 12.04, 11.04, 10.04, IA-32 and x64
  o Fedora Linux 18, 17, IA-32 and x64
  o CentOS 6.3, 5.9

  FreeBSD Drivers:

  o FreeBSD 9.1, 8.2

  Virtual OS Drivers:

  o VMware ESX 4.1
  o VMware ESXi 5.1
  o Citrix XenServer 6.1

  Solaris Drivers:

  o Solaris 10 U9
  o Solaris 11 Express*

  *Not Supported on Bootable Arrays; see Section 3.5.

2.2 Documentation on this DVD

PDF Format (English/Japanese):

- Adaptec SAS RAID Controllers Installation and User's Guide
- Adaptec RAID Controller Command Line Utility User's Guide
- maxView Storage Manager User's Guide
- Adaptec SAS RAID Controllers Quick Start Guide (multi-lingual)

HTML and Text Format:

- maxView Storage Manager Online Help
- Adaptec SAS RAID Controllers README.TXT file

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3. Installation and Setup

3.1 Installation Instructions

The Adaptec SAS RAID Controllers Installation and User's Guide contains complete installation information for the controllers and drivers. The Adaptec RAID Controllers Command Line Utility User's Guide contains complete installation information for ARCCONF. The maxView Storage Manager User's Guide contains complete installation information for the maxView Storage Manager software.

3.2 DKMS Driver Setup for Red Hat 6/CentOS 6

Installation instructions for Red Hat 6/CentOS 6 drivers with Dynamic Kernel Module Support (DKMS) are provided in the RAID Controllers Installation and User's Guide. DKMS ensures that the driver remains installed across OS updates. For DKMS driver instructions for other linux OSs, contact Adaptec support or search the Adaptec Support Knowledgebase (ASK) at www.adaptec.com.

3.3 uEFI-Mode OS Setup

Before attempting to install an operating system in uEFI mode, you must delete all MBR partitions from the disk or reformat the disk with GPT (GUID Partition Table). The installation may fail if you try to install on a disk with a Master Boot Record (MBR) partitioning scheme.

3.4 AFM-700 Flash Backup Unit Setup

The AFM-700 Flash Backup Unit includes three LEDs to help you monitor its status. See labels on daughterboard PCB for LED locations.

LED 'DS2': Charger Enabled

DS2 Solid on	Charger Enabled
DS2 Blinks	Charger Off (during cap learn cycle)
DS2 Temporary Blinks	No Supercapacitor attached

LED 'DS3': Supercapacitor power indication;
Supercapacitor charge Bleeding LED

LED 'DS4': Blinks faster when backup in progress

3.5 Solaris 11 Express Setup

Installing Solaris 11 Express on a bootable array is not supported in this release.

3.6 Fedora Linux Setup

To avoid a known PCIe Active State Power Management issue under Fedora Linux 14, you must add the OS option `pcie_aspm=off` in GRUB bootloader file "menu.lst". Follow these instructions:

1. When the first Fedora installation screen appears, press
   the 'Tab' key.

2. Before pressing the first 'reboot' button, edit grub/menu.lst:

   o Press Alt+F2
   o cd /mnt/sysimage/boot/grub/
   o Open the menu.lst file

3. Add 'pcie_aspm=off' just after 'rhgb quiet'. The new line
   should look like this:

   root (hd0,0)
   kernel /vmlinuz-2.6.33.3-85.fc13.i686.PAE... rhgb quiet pcie_aspm=off

3.7 Debian Linux Setup

After installing the Debian Linux driver, you must replace the SCSI Device Partition Name in Debian's GRUB bootloader with a UUID. Failure to update the partition name may cause the system to hang when the OS is rebooted. In the GRUB bootloader file "menu.lst", replace the SCSI device partition name (for instance, /dev/sda1), with UUID=<string>.

3.8 Ubuntu Linux Setup

- When installing the driver on an existing Ubuntu 11 or 12 OS, the install script may stop at "grep vermagic" if the OS is already installed with Ubuntu-desktop packages. To avoid this problem, always install the driver packages first:

  # sudo dpkg -i aacraid-1.2.1-29600-Ubuntu11.04+11.10+12.04-all.deb

  ...then install Ubuntu desktop utilities by doing an online update:

  # sudo apt-get install ubuntu-desktop

- After installing the Ubuntu driver, you must increase the SCSI command timeout value from 30 seconds (the default value) to 90 seconds. Failure to increase the timeout may cause the system to hang with an EXT4 error when a good drive is removed from a rebuilding array. Use these commands to increase the timeout in SYSFS, assuming /dev/sda, /dev/sdb, and /dev/sdc are the device LUNs on the Ubuntu Linux host:

  echo ``90``> /sys/block/sda/device/timeout
  echo ``90``> /sys/block /sdb/device/timeout
  echo ``90``> /sys/block/sdc/device/timeout

3.9 Adaptec maxCache Setup

- Adaptec maxCache SSD caching is supported on Adaptec Series Q controllers only; see www.adaptec.com/compatibility for a list of maxCache-compatible SSD drives.

- The maximum number of SSDs that you can install on a controller for maxCache caching applications is:

  7805Q: up to 8 SSDs, with 2TB total capacity
  71605Q: up to 16 SSDs, with 2TB total capacity
  6805Q/6805TQ: up to 8 SSDs, with 1TB total capacity

3.10 maxCache Container Configuration

The maxCache Container pre-fetches hot data blocks only for the first logical drive with maxCache write-caching enabled. Once the pre-fetch is complete, the container is considered 'configured' and no further pre-fetch occurs.

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4. Known Limitations

4.1 Installation DVD

The Installation DVD does not eject the DVD drive when you reboot from the DVD Main menu.

4.2 Linux Boot Device

Regardless of which device you select to install the OS, the boot record is always written to Device 0. As a result, Linux will fail to boot if you delete or swap away Device 0. For example, if you create three arrays in the BIOS--VOL-0, VOL-1, and VOL-2--install the OS on VOL-1, then swap VOL-0 and VOL-2, Linux will fail to boot. Restore the original array sequence and Linux boots normally. Ideally, you should always install on Device 0.

4.3 FreeBSD Issues

- Power management is not supported under FreeBSD.

- maxView Storage Manager is not supported on FreeBSD. Use ARCCONF to create and manage arrays.

4.4 AFM-700 Flash Backup Unit

Hot-plugging the AFM-700 supercapacitor module is not recommended. Doing so may result in unusual status updates, such as Preparing to Dead to Ready.

4.5 ATAPI Devices

Adaptec Series 7 controllers do not support ATAPI CD-ROM, DVD, or tape devices.

4.6 Drive Compatibility Issues

- OCZ Vertex 4 SSDs are not supported in this release.

- With Seagate Constellation ES drives (eg, ST3500514NS) with FW SN11, a medium error might result in SCSI command timeouts, depending on the I/O load. This condition might be seen when creating a logical drive with the 'build' initialization method.

- With Hitachi HUA721050KLA330 hard drives, the drive LED blinks just once when using the CTRL-A BIOS 'Identify Drive' option. The LED blinks continuously if blinked from ARCCONF or maxView Storage Manager.

- With HP LTO-4 Ultrium 1840 tape drives, backup fails with Adaptec Series 7 controllers. WORKAROUND: Upgrade the drive firmware to A63D using an on-board SAS or SATA controller, then try again.

4.7 System Compatibility Issues

- Promise J630 and J830 enclosures are not supported in this release.

- uEFI-mode setup is not supported on systems with Supermicro X9SCL-LN4F or X9DRi-F motherboards.

4.8 RAID 50/RAID 60, Max Drives

The maximum number of drives in a RAID 50 or RAID 60 differ between maxView Storage Manager, ARCCONF, and the BIOS:

- BIOS and ARCCONF: 128 drives max

  RAID 50 - From 2-16 legs with 3-32 drives/leg
  RAID 60 - From 2-16 legs with 4-16 drives/leg

- maxView Storage Manager:

  Assumes 2 legs for RAID 50/RAID 60 (non-selectable)
  RAID 50 3-32 drives/leg (64 total)
  RAID 60 4-16 drives/leg (32 total)

4.9 Solaris 32-bit Array Size Limits

Due to an OS limitation in Solaris 32-bit systems, the practical limit for array size on Solaris 32 is 1TB.

NOTE: If you create a >1TB array, OS tools, such as format or fdisk, won't detect them.

4.10 HDA Mode Reset

Adaptec Series 7 and Adaptec Series 6 controllers do not support Mode 0 reset, using the AFU utility on the Adaptec Installation DVD. These controllers are reset using the HDA mode jumper on the controller board. If a HDA reset is required to recover a controller, AFU cannot be used. Contact Adaptec by PMC customer support for assistance.

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