```
----------------------------------------------------------------------
README.TXT

Adaptec ASR-7805/ASR-7805Q/ASR-71605/ASR-71605Q/ASR-71605E/ASR-71685/ASR-72405 SAS/SATA
RAID Controllers

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

as of October 16, 2012
----------------------------------------------------------------------
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

    - Adaptec Series 7 SAS/SATA RAID Controllers, 6Gb/s, PCIe Gen 3,
      with optional AFM-700 flash backup unit

    - maxView Storage Manager, Web-based storage management
      software; replaces Adaptec Storage Manager (ASM) JAVA
      client

    - Adaptec maxCache 3.0, SSD caching software, with
      redundant write back caching support

    - Support for maxView Storage Manager GUI and ARCCONF command
      line utility on VMware Guest OSs
```

– uEFI/HII interface pre-boot BIOS*

      *Requires support for uEFI specification V2.10 or higher

    – Health monitoring for AFM-700 flash backup unit from GUI,
      BIOS, and command line

    – ARCCONF command line utility feature update

    ----
2. Software and Documentation

    2.1 Driver & Utility Software

        – Adaptec Firmware/BIOS/Drivers/Utilities Version 8.0

          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 6.2, 5.8, 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 16, 15, 14, IA-32 and x64
          o CentOS 6.2, 5.8

          FreeBSD Drivers:

          o FreeBSD 9, 8.2

          VMware Drivers:

          o VMware ESX 4.1 Classic
          o VMware ESXi 5.0

          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
          – Adaptec PerfMon Utility 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 Bootable DVD Mode

        Bootable DVD mode is not supported in this release--the ability
        to boot from the installation DVD and configure your controller
        before installing the OS or maxView Storage Manager. While
        information about Bootable DVD mode is presented in the users
        guides, this feature is not currently available.

    3.3 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.

    3.4 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.

    3.5 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 maxView Storage Manager Setup

   – In this release, maxView Storage Manager supports Adaptec
     Series 7 controllers only. It is not backwards compatible with
     older Adaptec controller models.

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

   – maxView Storage Manager and legacy ASM and cannot coexist on
     the same system.

   – maxView Storage Manager requires the following range of ports
     to be open for remote access:

     o 34570–34580 (TCP)
     o 34570 (UDP)
     o 34577–34580 (UDP)

   3.9.1 maxView Storage Manager Setup – Windows 8

   To log in and use maxView Storage Manager on a Windows 8 system,
   you must create a local user account; you cannot use your
   MS Live account. To create a local user account:

   1. Log into your MS Live account.
   2. Select Settings->Change PC Settings->Users->Switch to Local user.
   3. Provide account details.
   4. Start maxView Storage Manager and log in with your local user
      account credentials.

   3.9.2 maxView Storage Manager Setup – Linux

   To ensure that the maxView Storage Manager CIM Server initializes
   and starts correctly on systems with SELINUX enabled, enter the
   following commands, as root:

   # cd /usr/StorMan/pegasus/bin
   # chcon –t textrel_shlib_t /usr/StorMan/pegasus/lib/libpegcommon.so.1

```
        (or chcon -t textrel_shlib_t /usr/StorMan/pegasus/lib/lib*  if any other binary
relocation failed)
```

       3.9.3 maxView Storage Manager Setup – Changing Credentials

       To change maxView Storage Manager's login credentials after changing
       the OS-level username/password for the Administrator's account:

       1. Run changecredentials.exe (in the maxView Storage Manager installation
directory):

          changecredentials.exe <new_username> <new_password>

       2. Start maxView Storage Manager and login with the new credentials.

   3.10 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.

      – You can install a maximum of 16 SSDs on a controller for
        maxCache caching applications.

       3.10.1 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.

---
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 AFM-700 Flash Backup Unit

      – The AFM-700 flash backup unit reports a 'Not Ready' status
        when the system is booted, even if the supercapcitor is
        fully charged. Use the CTRL+A BIOS 'Backup Unit Status'
        option to verify that the unit is in the 'Ready' state.

      – 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.

   4.4 maxView Storage Manager

      – After using a hot spare to successfully rebuild a redundant
        logical drive, maxView Storage Manager will continue to
        report the drive as a global hot spare. To remove the hot
        spare designation, delete it in maxView Storage Manager.

      – maxView Storage Manager displays incomplete event messages
        for logical drive members that are hot unplugged from an
        enclosure. The event messages do not include the enclosure

number or serial number.

– In dual-controller systems, the controller order in maxView
  Storage Manager and the BIOS differs. Example: with an
  Adaptec 72405 and 7805 installed, the BIOS reports
  the 72405 as controller 1 and the 7805 as controller 2;
  in the GUI, the controller order is reversed.

– On CentOS 5.8 x64, email notifications may not be sent for
  logical drive creations, degraded logical drives, or logical
  drives that are rebuilding or fully rebuilt.

– In this release, maxView Storage Manager does not show connector
  information for SGPIO enclosures.

– To "uninitialize" a physical drive, use ARCCONF or the BIOS.
  maxView Storage Manager does not support the uninitialize
  action in this release.

– maxView Storage Manager can "see" RAID controllers operating
  in HBA mode or Auto-Volume mode. However, to change the
  controller mode, you must use ARCCONF or the BIOS.

– We do not recommend performing a RAID-level migration (RLM)
  or Online Capacity Expansion (OCE) on a logical drive with
  maxCache enabled.

– Always allow a RAID-level migration to complete before creating
  a support archive file. Otherwise, the support archive will
  include incorrect partition information. Once the migration is
  complete, the partition information will be reported correctly.

– When using maxView Storage Manager and the CLI concurrently,
  configuration changes may not appear in the maxView Storage
  Manager GUI until you refresh the display (by pressing F5).

– Configuration changes may not appear in the GUI immediately.

4.4.1 Browser Issues

– With Microsoft Internet Explorer 8.0.7601, maxView
  Storage Manager displays two 'Unassign Spare' icons on the
  ribbon, in the Physical Disk group; one on the first row,
  the other on the second. Only the one on the first row is
  enabled.

– With Microsoft Internet Explorer 10, the controller
  firmware update wizard does not show the f/w update
  file name when the upload completes; click Next, then
  Back to refresh the display.

– With Apple Safari, the controller firmware update wizard
  supports loading only one f/w update file at a time. Trying
  to load multiple files fails with an "invalid size" error.

4.4.2 Remote System Issues

On Linux, maxView Storage Manager may fail to connect with
remote Linux or Solaris systems, returning an "Add system
operation Failed" message. To avoid this problem, add the
local host IP address in the property 'localip' in the
configuration file /usr/StorMan/config/server.properties;
for example, localip=10.16.32.25. The remote system will
read this IP address if it does not find a proper IP
address during the connection process.

4.5 Power Management

– Power management is not supported under FreeBSD.

– In maxView Storage Manager, the power management setting in

the Logical Drive Creation wizard is not saved after the
        logical drive is created. It is always disabled.
        WORKAROUND: enable power management for the logical
        drive with the Set Properties operation.

    4.6 ATAPI Devices

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

    4.7 Drive Compatibility Issues

        – With OCZ Vertex SSDs with FW 1.4, logical drives comprising
          these SSDs will fail under I/O load. WORKAROUND: upgrade to FW 1.5.

        – 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 EH4859 LTO-4 tape drives, backup fails with Adaptec
          Series 7 controllers. WORKAROUND: upgrade to FW AD63D using
          an Adaptec Series 5 controller, then try again.

    4.8 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.

    4.9 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)

    4.10 RAID 10 Rebuild Order

        With a degraded RAID 10 logical drive, the drive is rebuilt
        one leg at a time, not in parallel.

    4.11 Verify with Fix

        The Verify with Fix operation (in maxView Storage Manager and
        ARCCONF) is NOT available when:

        1. The logical drive has a non-redundant RAID level
        2. Other tasks are in progress on the logical drive
        3. The logical drive is in a non-optimal or impacted state
        4. The logical drive is Quick initialized

    4.12 ARCCONF Backward Compatibility

        ARCCONF is backward compatible with older Adaptec controller

models. As a result, the ARCCONF user's guide and online help
show command options that are not supported by Adaptec Series 7
controllers. Examples: with Adaptec Series 7, ARCCONF CREATE
does not support 16KB and 32KB stripe sizes or RAID 5EE;
with ARCCONF SETMAXCACHE, Adaptec Series 7 does not support
ADDTOPOOL or REMOVEFROMPOOL.

4.13 Online Help Issues

In the maxView Storage Manager online help, some links
show the full file path to the topic, rather than the
topic title. The link itself is unaffected.

4.14 Uninstallation Issues

- If a previous version of maxView Storage Manager is installed
  on a system, you must remove it before beginning a new
  installation. You cannot upgrade an existing installation.

- When using the installer's 'Modify' option to uninstall
  maxView Storage Manager, the 'Adaptec' folder is not
  deleted from the file system.

- Uninstall Program, on the Windows Control Panel, incorrectly
  reports the size of maxView Storage Manager as 611MB if you
  previously removed individual components (like ARCCONF)
  with the installer's 'Modify' option.