Release notes for the Code drop Dated: 04/21/06

This release notes contains the following:

1. Description of the release
2. Supported hardware
3. List of Software deliverables
4. Major functional changes
5. Major Bug Fixes
6. Prerequisites of using the Software
7. Tested Configuration
8. Known Issues

1. Description of the Release:
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Date of release: 04/21/06

This is the official software release containing the list of software components listed in the section 3 of the release note.

2. Supported Hardware:
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The software release supports the following hardware listed below:

Adaptec ASC-58300 SAS HostRAID Controller
Adaptec ASC-48300 SAS HostRAID Controller
Adaptec ASC-44300 SAS HostRAID Controller
Supports only I2C or Inband Enclosure management.

3. List of Software deliverables:
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These are the following set of deliverables for this release:

3.1 BIOS and DOS tools:
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1. Expansion ROM BIOS - 1.2-0 1705
2. Array Configuration Utility (ACU.exe) - 1.2-0 1705
3. Adaptec Flash Utility (AFU.EXE) - 1.2-0 1705
4. SHIM - v5918

3.2 Operating System Drivers:
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Windows Driver - 1.2.5918.0

Supported Windows OS:
- Windows 2000 Server, Advanced Server, Professional, and miniport IA-32
- Windows 2003 Server, Standard, Enterprise, Web edition, miniport IA-32, storport x64, AMD64, and EM64T
- Windows XP Professional, miniport IA-32

Netware Driver - 1.2.5918.0

Supported OS:
- Netware 6.5 SP5

Linux Driver - 1.2.5918.0

Supported OS: Out of BOX, current and previous service pack or updates are supported for following Linux flavors

- Red Hat Enterprise Linux 3.0, IA-32 and x64
- Red Hat Enterprise Linux 4.0, IA-32 and x64
- SuSE Pro 9.2, 9.3, 10.0, IA-32 and x64
- UL 1.0 (SLES 8), IA-32 and x64
- SuSE Linux Enterprise Server 9.0, IA-32 and x64

3.3 Adaptec Storage Manager:
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1. ASM - Build 4818

Supported OS:
- Windows IA-32 and x64
- Linux IA-32 and x64
- Netware 6.5

4. Major Functional changes:
4.1 BIOS
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1. Added support for SATA Device Port Reset functionality in the BIOS.

2. Added support for handling medium errors during the Read/Write for RAID1 and RAID10 arrays in the BIOS. If a medium error occurs during the Read operation in one of the disks, the array state will change to Verify for the OS drivers to perform a verify operation. If a medium error happens during a Write operation, the array is marked degraded.

3. Modified the Int 13h, Function 4800h to return the device type as "RAID" device, instead of "SCSI" device.

4.2 Driver
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4.2.1 Core
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1. Improve RAID 1 and RAID 10 I/O performance for sequential I/Os.

2. Implemented "no change" in disk write cache setting and retains the current cache setting.

3. Increase scatter/gather size to handle large CSMI IOCTL I/O.

4. Added support to handle command overlapped I/O errors.

5. Improve performance for Stripping RAIDs by merging I/Os within the same member.

6. Enable/disable RAID 10 feature depending on BIOS version.

7. Added support for a multi-level cascaded expander configuration.

8. Added support for up to 8 maximum SAS HBAs in a system.

4.2.1 Windows driver
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1. Added "Alignment Mask" setting in Windows registry to indicate buffer alignment required by the HBA for transfer operation, especially since our driver supports scatter/gather.

2. Improve random read performance on Windows Storport driver.

3. Increased QueueDepth (NumberOfRequests) for 32 bit Windows driver from 28 to 64 and for 64 bit from 16 to 32.

4. During Standby S1 and S3, the driver spins down all drives to save disks power.
4.2.2 Linux driver
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1. Increased sglist size to 128 from 16.
2. Removed and replaced to be obsolete kernel api
csi_add_timer/scsi_delete_timer from code.

4.2.3 NetWare driver
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None.

4.3 ASM/HRCONF
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1. Added support in ASM for up to 8 maximum SAS HBAs in a system.
2. Added command line option, setTask, for starting RAID task in HRCONF.

5. Major Bug Fixes:
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5.1 BIOS
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1. Fixed the issue with DOS ACU displaying the wrong Write Cache settings
   for the SATA drives [ADPmp95617]
2. Fixed the issue with DOS ACU not recording the Write Cache properties
   of an array and boot unit during the RECORD operation [ADPmp96399,
   ADPmp96244]
3. The time out for the SATA IO commands increased to 35 seconds within
   the BIOS code to support some SATA devices that take a longer time
   to recover from reset.
4. If a member of RAID-0 array is pulled out, the array status will turn
   offline. But if the same member is re-inserted, the array state was
   going to "MIGRATION". This issue has been fixed. [ADPmp95880]
5. Fixed the issue, where the BIOS was altering the write Cache setting
   in the saved page of the mode pages in the SAS drive, instead of the
   current page. This has been fixed.
6. Reinserted a previous faulted member to a Optimal RAID-10, after
   pressing BIOS Ctrl+A during device scan, the device is not available.
   This issue has been fixed.
7. Fixed Post Memory Manager handle reuse issue that was causing the
   BIOS to hang with certain system BIOS vendors.

5.2 Driver
5.2.1 Core Bug Fixes
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1. Fixed system hang when a device is removed from a daisy chained storage enclosure box while IOs are running.

2. Fixed retrieving SATA link speed negotiation attached to SAS controllers.

3. Fixed displaying greater than 32 devices for ASM.

4. Fixed system hang during hot insert of storage enclosure.

5. Fixed OS restart issue with while bootable RAID 1 or RAID 10 is running rebuild operation.

6. Fixed incorrect progress bar displayed in ASM when Verify operation completes.

7. Fixed the problem with reinserted hot spare doesn't show in ASM.

8. Fixed the issue with clearing operation does not resume where it left off after safe shutdown.

9. Fixed driver unload problem if there's no drive attached, only with certain storage enclosure.

10. Fixed issue with the Rebuilding RAID 1 becoming two Configured Singles.

11. Fixed S1/S4 takeing long time to go to sleep mode if many drives connected.

12. Improved the write performance when the Adaptec SAS HBA is run in PCI mode.

13. Changes were made in the driver so that ASM is able to display the correct SCSI Sense Data sent by the drive.

14. Resolved a BSOD if a Format Unit command is issued to a SAS drive.

5.2.2 Windows Bug Fixes
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1. Fixed CrashDMP and Hibernation failure on Windows non-HostRAID mode.

2. Fixed hibernation failure due to intermittent system crash and hang.

3. Fixed intermittent BSOD while running I/O with hibernation overnight.

5. Fixed Windows getting the BSOD at the final reboot after installation and fixed SAS - 64bit W2K3 / BSOD when installing OS on 2nd partition of a JBOD.

6. The Adaptec SAS HBA may not communicate or may stop communicating with Maxtor SAS disk drives under the Windows operating systems if certain error types are reported by the drive. This has been fixed.

5.2.3 Linux Bug Fixes
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1. Fixed broken user option - queue depth setting.
2. Added another thread to drive the device request queue. This a fix for asynchronous events such as hot add/remove + IO that caused device queue to stop running.

5.2.4 NetWare Bug Fixes
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1. Fixed 1 byte alignment issue.
2. Fixed "NW6.5 driver version is 0.0.0.0 when run HRCONF GETVERSION 1"
3. Fixed NW65-SP5 storage enclosure may not show the amber fault LED.
4. Fixed NW65-SP5 System hang during reboot with cascaded expanders

5.3 ASM
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1. Changes were made in Write Cache setting so that BIOS and application create RAID with same write cache settings.
2. Fixed issue where HRCONF romupdate command failed to update SAS controller flash image.
3. Fixed storage enclosure Power supply status update in ASM.
4. Fixed Medium Error event to add LBA and device information.
5. Added support for up to 8 maximum SAS HBAs in a system.

6. Prerequisites of Using the Software:
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+ An x86 based PC/AT compatible platform with at least one PCI-x slot
+ The system BIOS should be able provide the PCI resources to the SAS controller.
+ Please use the appropriate flash images for the controller that you are using. The Flash Utility will prompt for the appropriate file name when you try to update the Expansion ROM. Please refer to the documentation on the BIOS zip files for the file name descriptions and product family.
7. Tested Configuration:
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The software was tested with the mule cards with ASIC on the PC/AT compatible PCI-x platforms. These are the various components used during the testing:
+ IBM x86 PC/AT compatible platform with Intel Xeon
+ Tested with Direct attached SAS drives and SATA drives
+ Tested with SAS drives attached via expander
+ Tested with SATA drives attached via expander

8. Known Issues/Limitations:
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These are the known issues/limitations at the time of the release:

8.1 Under heavy I/O when the system is resumed from S3 the user may observe that controllers are not responding event in ASM. The controllers display will correct itself in few minutes.

8.2 Selecting Launch Configuration Utility to build and manage hardware multiple times opens multiple ASM Windows.

8.3 ACU allows only one Hot Spare device if the ID#0 is made as simple volume. [ADPmp96794]

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