ATTO Technology, Inc.

Product Release Notes

ExpressSAS 6Gb RAID Release v2.60 - Linux

1. General Release Information

These product release notes define the new features, changes, known issues and release details that apply to the ExpressSAS 6Gb RAID adapter product v2.60 that was released on June 10, 2015. This information pertains to the following Linux operating systems: Red Hat Enterprise Linux 6, 7 (x86, x64), CentOS 6, 7 (x86, x64), openSUSE 12.2, 12.3 (x86, x64), SUSE Linux Enterprise Server 11 SP2, 11 SP3 (x86, x64), and Fedora 19, 20 (x86, x64).

2. Changes

- ***Version 2.60 (Released 06/10/2015)***
  - **Note:** It is recommended that firmware dated 06/04/2015 be used with this driver release.
  - **New Features, Enhancements and Changes**
    - Made changes to detect when the firmware has been reset before the driver has loaded and attempt to save the core dump and recover the firmware.

- ***Version 2.55 (Released 10/24/2014)***
  - **Note:** It is recommended that firmware dated 10/23/2013 be used with this driver release.
  - **New Features, Enhancements and Changes**
    - Fixed a potential driver crash if the adapter is reset when driver resources are exhausted.
    - Resolved a rare instance where RAID group commands may be improperly formatted during an adapter reset.

- ***Version 2.50 (Released 8/5/2014)***
  - **Note:** It is recommended that firmware dated 07/31/2013 be used with this driver release.
  - **New Features, Enhancements and Changes**
    - Added discovery of RAID50 / RAID60 groups for firmware that support them.

- ***Version 2.35 (Released 4/2/2014)***
  - **Note:** It is recommended that firmware dated 03/27/2013 be used with this driver release.
  - **New Features, Enhancements and Changes**
    - Resolved issue where R680 driver failed to install on openSuSE 13.1 x86
    - Enhanced event logs when the driver resets the firmware. Now indicates why the driver reset the firmware.

- ***Version 2.31 (Released 9/24/2013)***
  - **Note:** It is recommended that firmware dated 09/24/2013 be used with this driver release.
  - **New Features, Enhancements and Changes**
    - Updated to now allow IOCTL processing even when adapter is degraded.
    - Add support for updated ROC controller.
    - Driver will now remove devices from the systems when the adapter is disabled.

- ***Version 2.30 (Released 6/27/2013)***
  - **Note:** It is recommended that firmware dated 06/25/2013 be used with this driver release.
  - **New Features, Enhancements and Changes**

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        - Added event logging to discovery process.
        - Pass through devices in firmware versions prior to 3.00 are no longer discovered. This prevents data corruption.
        - Fixed compile issues with 3.7 and 3.8+ kernels.
        - Fixed driver install script preventing it from running on Ubuntu.

- ***Version 2.25 (Released 3/12/2013)***
    - **Note:** It is recommended that firmware dated 3/4/2013 be used with this driver release.
    - **New Features, Enhancements and Changes**
        - Added support for Frey B2 RAID controller chips.
        - Added feature to send a notification that the firmware has been reset when coming out of power management.
        - Pass through devices are persistently mapped to prevent data corruption.
        - We now notify the firmware when the driver is shutting down.
        - Added support for the atsasphy and atsastop CLI tools.
        - Added support for additional firmware based functionality in the atinfo and attrace CLI tools.
        - Added support for the SMP API.
        - Added support for CSMI.
        - Return a zero size file if the firmware core dump is not present.
        - Added support for reading the SAS address of front-end devices.
        - Fixed an issue causing mkfs commands to hang when trying to format filesystem.
        - Fixed a rare issue preventing adapters from coming out of hibernate properly.
        - Fixed an issue where the entire RAID group name may not be displayed in event logs.

- ***Version 2.18 (Released 8/27/2012)***
    - **Note:** It is recommended that firmware dated 8/24/2012 be used with this driver release.
    - **New Features, Enhancements and Changes**
        - Corrected an issue in the ATTO ConfigTool where a spurious bug log entry was created in the Linux syslog.

- ***Version 2.16 (Released 2/22/2012)***
    - **Note:** It is recommended that firmware dated 2/17/2012 be used with this driver release.
    - **New Features, Enhancements and Changes**
        - Added support for the atreset CLI tool.
        - Corrected an issue where resources are exhausted while command coalescing.

- ***Version 2.15 (Released 12/15/2011)***
    - **Note:** It is recommended that firmware dated 12/15/2011 be used with this driver release.
    - **New Features, Enhancements and Changes**
        - Several enhancements have been made to chip reset processing.
        - Enhancements have been made to error recovery and task management while using command coalescing.
        - Report which type of boot image is present on the card with Configuration Tool version 4.02 and later (BIOS, EFI 32-bit or EFI 64-bit).

- ***Version 2.11 (Released 10/14/2011)***
    - **Note:** It is recommended that firmware dated 10/12/2011 be used with this driver release.
    - **New Features, Enhancements and Changes**
        - Several enhancements have been made throughout the driver to report errors and operate correctly in degraded mode. Enhancements have been made in the APIs for NVRAM, flashing and RAID management.
        - Resolved an issue with command coalescing.

- ***Version 2.10 (Released 06/29/2011)***
    - **Note:** It is recommended that firmware dated 06/22/2011 be used with this driver release.
    - **New Features, Enhancements and Changes**

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        - The driver to firmware communication mechanism has been changed. Driver v2.10, or later, is required to support firmware v2.50, and later. Additionally, the v2.10 driver supports earlier firmware versions from v2.00 up through v2.20.
        - Fixes to support the 2.6.39 Linux kernel.

- ***Version 2.07 (Released 04/21/2011)***
    - **Note:** It is recommended that firmware dated 04/18/2011 be used with this driver release.
    - **New Features, Enhancements and Changes**
        - Added support to the R60F, R608 and R644 for virtual SES.

- ***Version 2.06 (Released 03/25/2011)***
    - **Note:** It is recommended that firmware dated 03/25/2011 be utilized with this driver release.
    - **New Features, Enhancements and Changes**
        - Increased performance for transactional and streaming applications.
        - Improved handling and discovery of drives during system reboot and when drives are pulled or reset.
        - Expanded reporting for disk drive Vendor ID.
        - NCQ is now enabled by default.
        - Resolved various, minor incident fixes to improve overall performance

- ***Version 2.05 (Released 2/16/11)***
    - **Note:** It is recommended that firmware dated 02/11/11 be utilized with this driver release.
    - **New Features, Enhancements and Changes**
        - Performance improvements in IOPs and MB/s applications.
        - CacheAssure™ performance improvements when in High Protection mode.
        - SAS Multiplexing implemented. This enables the user to achieve performance improvements with 6Gb RAID when using slower 3Gb drives.
        - Improved compatibility between the operating systems range of physical memory and the physical memory of the hardware.
        - Increased Commands per LUN to 64 which helped improve performance in Linux.
        - Increased the default scatter/gather list size to 512 bytes.

- ***Version 2.00 (Released 9/22/2010)***
    - **Note:** It is recommended that firmware dated 09/17/2010 be utilized with this driver release.
      Note: Any upgrade from a previous version to 2.00 for the driver and firmware must be done in a specific order. Version 2.00 firmware must be updated first with a flash bundle using the ATTO Configuration Tool or the Linux CLI tool, atflash_32 (for 32-bit OS) or atflash_x64 (for 64-bit OS) version 1.01. Once the new firmware is flashed, the 2.00 driver should be loaded using the "install.sh" script as described in the "installation instruction" in driver readme file. When the script asks if you would like to load the driver, type "N" for no and reboot the system to initiate all changes. Please note that if the driver is installed first you will not be able to install the 2.00 firmware using the ATTO Configuration Tool. Downgrading back to 1.00 will allow you to flash the 2.00 firmware.
    - **New Features, Enhancements and Changes**
        - Initial Release and added support for the R60F.
        - The driver to firmware communication mechanism has been improved. Driver versions 2.00 and later are only supported with version 2.00 and later firmware.
        - Added support for chained scatter/gather lists.

- ***Version 1.00 (Released 5/21/2010)***
    - **Note:** It is recommended that firmware dated 05/20/10 be utilized with this driver release.
    - **New Features, Enhancements and Changes**
        - Initial release for the R644, R680 and R608.

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3. Known Issues/Advisements

- See known firmware issues in the DOS release notes

4. Affected Products

Product Name	SKU
ExpressSAS R644 RAID Adapter	ESAS-R644-000
ExpressSAS R680 RAID Adapter	ESAS-R680-000
ExpressSAS R608 RAID Adapter	ESAS-R608-000
ExpressSAS R60F RAID Adapter	ESAS-R60F-000
ExpressSAS R644 RAID Adapter with CacheAssure	ESAS-R644-C00
ExpressSAS R680 RAID Adapter with CacheAssure	ESAS-R680-C00
ExpressSAS R608 RAID Adapter with CacheAssure	ESAS-R608-C00
ExpressSAS R60F RAID Adapter with CacheAssure	ESAS-R60F-C00

5. Contacting ATTO Support

ATTO Technology, Inc. is renowned for its technical support services. ATTO's goal is to provide you the quickest response possible for your technical support needs, and is available Monday-Friday, 8:00 AM to 6:00 PM EST (except holidays and plant closings).

ATTO Technical Support can be contacted via phone or email:

- Phone: 716.691.1999 ext. 242
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