ATTO Technology, Inc.

Product Release Notes

ExpressSAS RAID Release v3.65 - Linux

1. General Release Information

These product release notes define the new features, changes, known issues and release details that apply to the ExpressSAS RAID adapter product v3.65 that was released on 07/15/10. This information pertains to the Linux OS.

2. Changes

- ***Version 3.65 (Released 07/15/10)***
  - The following apply to changes made from v3.60 to v3.65
  - **Note:** It is recommended that firmware dated 07/09/10 be utilized with this driver release.
  - **New Features, Enhancements and Changes**
    - Enhanced recovery from a chip reset.
    - Improved compatibility for multiple IOCTLs, sent simultaneously.
    - Added functionality to interface with CLI tools.
    - Enhanced error checking for RAID group names in the Configuration Tool.
    - Updated code for compatibility with Linux kernel 2.6.33

- ***Version 3.60 (Released 10/29/2009)***
  - The following apply to changes made from v3.30 to v3.60
  - **Note:** It is recommended that firmware dated 10/29/09 be utilized with this driver release.
  - **New Features, Enhancements and Changes**
    - DriveAssure™ implemented. ATTO exclusive allows systems to run longer, faster and smoother without interrupted data flow.
      - Uses active monitoring of drive response times, retries of reads and writes and alternative methods of data generation, to return data without failing drives.
    - Improved performance for sequential read and write commands
    - Improved event logging documentation for degraded mode, SCSI and command errors.
    - Added descriptive strings for sense keys to SCSI error event logging.
    - Removed “num_ioreq” module parameter.
    - Added “io_time_out” module parameter (default value of 30 seconds.)

- ***Version 3.30 (Released 07/31/2009)***
  - The following apply to changes made from v3.20 to v3.30
  - **Note:** It is recommended that firmware dated 7/27/09 be utilized with this driver release.
  - **New Features, Enhancements and Changes**
    - Improved event logging documentation for improved diagnostics.
    - Expanded quick initialization capability for faster initialization for parity RAID groups.
    - Enhanced Drive identification of faulty drives.
    - CLI command set enhancement adds the ability to identify a drive within a RAID group as well as its firmware revision, vendor, capacity, drive serial number and more.
    - SNMP (Simple Network Management Protocol) universal protocol for collecting and monitoring information from devices on the network.
    - BlockDevIdentify command expanded to accept additional drive manufacturers.

- ***Version 3.20 (Released 03/30/2009)***
  - The following apply to changes made from v3.01 to v3.20
  - **Note:** It is recommended that firmware dated 3/27/09 be utilized with this driver release.
  - **New Features, Enhancements and Changes**
    - SATA NCQ is disabled in NVRAM by default
    - Added support for the sector scanning

- ***Version 3.01 (Released 11/18/2008)***
  - **Note:** It is recommended that firmware dated 11/18/08 be utilized with this driver release.
  - The following apply to changes made from v3.00 to v3.01
  - **New Features, Enhancements and Changes**
    - Miscellaneous compilation fixes
    - Fixed a bug in Linux Rescan Host Routine that could lead to invalid outstanding references to the driver. This would prevent the driver from being unloaded
    - Resolved an issue regarding the HBA not coming up at full speed under PCI Express 2.0. The problem occurred when using a specific Intel chipset, the MCH 5400

- ***Version 3.00 (Released 10/2/2008)***
  - **Note:** It is recommended that firmware dated 09/25/08 be utilized with this driver release.
  - The following apply to changes made from v2.10 to v3.00
  - **New Features, Enhancements and Changes**
    - RAID 6 Parity Protection
    - Drive Health Monitoring
    - Drive performance Metrics
    - Write Cache Control
    - Added Support for newer Kernels

- ***Version 2.20 (Released 6/30/2008)***
  - **Note:** It is recommended that firmware dated 06/27/08 be utilized with this driver release.
  - The following apply to changes made from v2.00 to v2.20
  - **New Features, Enhancements and Changes**
    - Improved Media Error Handling
      - To account for variances in physical media, the ExpressSAS RAID products have implemented enhanced error handling to minimize potential workflow interruptions caused by imperfect media. In addition, during RAID group initialization, users will have a choice between an Advanced Initialization method which will thoroughly scan and clean the selected media minimizing the RAID group's susceptibility to errors. This is usually done the first time a RAID group is created and requires that no I/O be allowed during the process. Another initialization method added, Express Initialization, allows users to perform I/O during initialization and is generally used when the media has previously been through a full initialization cycle.
    - Enhanced SES support:
      - Monitoring and notification of enclosure properties (i.e. power, fan speed, etc.)
        - Users are able to actively monitor the characteristics of any SES supported enclosure device. This includes viewing the status of the enclosure power supply, temperature and fan speed. In addition, through the Configuration Tool, the user can configure the ExpressSAS RAID to provide email notifications when an event such as a failure occurs.
      - Support for displaying enclosure serial number
        - The ExpressSAS RAID adapter/Configuration Tool can display an enclosure serial number attached to the adapter if supported by the enclosure.
      - Ability to illuminate fault LEDs in an enclosure with an embedded expander
        - To simplify usability, users can easily identify a faulted drive and replace accordingly.
      - Identify a drive in an enclosure with an embedded expander from the Configuration Tool

        - To simplify usability, from the Configuration Tool, users are able to identify a selected drive by flashing the drive LED.
    - Identify all drives in a single RAID group within an enclosure with an embedded expander
        - To simplify usability, from the Configuration Tool, users are able to identify all members of a selected RAID group by flashing the LEDs of the respective drives.
    - Identify all drives within an enclosure with an embedded expander
        - To simplify usability, from the Configuration Tool, users are able to identify all drives within a selected enclosure by flashing the LEDs of the respective drives.
- Enhanced GUI functionality:
    - The following implementations have been made to the ATTO Configuration Tool to improve overall usability and provide the user with more relevant information related to their RAID group and media.
        - Enhanced RAID group properties provide more functionality and additional performance optimization parameters for the advanced user.
        - Ability to display advanced drive properties provides the user with additional information related to the attached drives.
        - Enhanced event notifications and logging provides users with additional troubleshooting information to diagnose problems.
        - Improved user help text provides additional information on product functionality.
- Support for drive filtering (OEM Only)
    - Through a unique OEM parameter setting, the ExpressSAS RAID adapter can limit the RAID group creation to use only specified drive types. This minimizes the support efforts for OEMs and allows them to use only those drives “qualified” for their solution.
- Improved Performance
    - Additional performance improvements have been incorporated to further enhance SAS and SATA performance for reads as well as writes in various applications.
    - The ExpressSAS RAID product has enhanced the rebuild prioritization feature thus increasing general MB/sec performance during the rebuild process.
- Added support for ExpressSAS R30F 16 port RAID adapter
    - Improved RAID management interface to support new features. Note: The 2.20 driver is required to flash any flash bundle with the 2.20 (080627) firmware.
    - Improvements made to buffer handling
    - Improved support for kernel 2.6.25

- ***Version 2.00 (Released 1/24/2008)***
    - **Note:** It is recommended that firmware dated 01/23/08 be utilized with this driver release.
    - The following apply to changes made from v1.20 to v2.00
    - **New Features, Enhancements and Changes**
        - Performance improvements: Up to 5x improvement in IOPS performance
        - Pass-through mode: Provides support for operation of the RAID adapter with non-block devices such as tape drives and libraries.
        - Auto rebuild: Support added to allow users to set the adapter to automatically begin a rebuild of a RAID group when a failed drive is replaced with a new, clean drive.
        - Staggered drive spin-up: Support added to set the interval to spin drives up individually ultimately lowering the power consumption on the enclosure power supply.
        - SES support: Added support to monitor the health of the storage enclosure and its respective devices.
        - GUI Improvements: Added ability to display RAID group properties within the Configuration Tool.
        - Fixed handling of failed task management commands (which can happen during flashing).
        - Fixed incidents with builds on older kernels.
        - Fixed chip reset handling.

3. Known Issues/Advisements

- None.

4. Affected Products

Product Name	SKU
ExpressSAS R348 RAID Adapter	ESAS-R348-000
ExpressSAS R380 RAID Adapter	ESAS-R380-000
ExpressSAS R30F RAID Adapter	ESAS-R30F-000

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 8:00 PM EST (except holidays and plant closings).

ATTO Technical Support can be contacted via phone or email:

- Phone: 716.691.1999 ext. 242
- E-Mail: techsupport@attotech.com