



ExpressSAS 6Gb RAID Release v2.71 – Windows®

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 v2.71 that was released on July 12, 2016. This information pertains to the Microsoft Windows OS including Windows 10, 8.1, 8, 7, Server 2012 R2, Server 2012, Server 2008 R2 (x64) and Server 2008 (x86, x64) platforms.

2. Changes

- **Version 2.71 (Released 07/12/2016)**
 - **Note:** It is recommended that firmware dated 06/23/2016 be used with this driver release.
 - **New Features, Enhancements and Changes**
 - Resolved a rare issue where the driver could crash when running heavy I/O.

- **Version 2.70 (Released 12/16/2015)**
 - **Note:** It is recommended that firmware dated 12/11/2015 be used with this driver release.
 - **New Features, Enhancements and Changes**
 - Added feature that attempts to recover a firmware core dump when the heartbeat fails on firmware.

- **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**
 - Fixed a rare issue where events that happened prior to the driver loading could be lost.
 - 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 10/23/2014 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 08/05/2014)**
 - **Note:** It is recommended that firmware dated 07/31/2014 be used with this driver release.
 - **New Features, Enhancements and Changes**
 - The OS layer code will back-off the command timeout by, at most, 5 seconds.
 - Added discovery of RAID50 / RAID60 groups for firmware that supports them.
 - Fixed custom event codes to not conflict with system event codes. This issue was introduced in drivers 2.25 – 2.40. Events logged with those versions cannot be read with other driver versions installed.
 - Added an event log for when firmware event log messages are being dropped by the driver.

- **Version 2.40 (Released 04/02/2014)**
 - **Note:** It is recommended that firmware dated 03/27/2014 be used with this driver release.
 - **New Features, Enhancements and Changes**
 - Modified logging to always log an event when an adapter is initialized; resolved several cases where event logs for initialization failures were not being done.
 - Corrected a data issue that could occur under heavy I/O load when using ATTO Power Center RAID software.
 - Enhanced event logs when the driver resets the firmware. Now indicates why the driver reset the firmware.

- **Version 2.35 (Released 1/16/2014)**
 - **Note:** It is recommended that firmware dated 01/13/2014 be used with this driver release.
 - **New Features, Enhancements and Changes**
 - Added uninstall functionality to the driver installer.
 - Devices are now removed from the system when the adapter is degraded.

- **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**
 - This driver release has passed Microsoft's HCK compatibility tests and is listed on the Windows Certified Products List for Windows 8 and Server 2012.
 - Added event logging to discovery process.
 - Pass through devices in firmware versions prior to 3.00 are no longer discovered. This prevents data corruption.
 - Corrected an issue for Windows 8 x86 that limited I/O transfer sizes to 1MB.

- **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**
 - 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 atstasstop 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.
 - Redesigned power management to prevent Windows 8 from crashing when resuming from sleep.
 - 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 where the entire RAID group name may not be displayed in event logs.

- **Version 2.19 (Released 9/27/2012)**
 - **Note:** It is recommended that firmware dated 9/27/2012 be used with this driver release.
 - **New Features, Enhancements and Changes**
 - This driver version supports ROC version B2 hardware.
 - A notification is now sent when coming out of power management that the firmware has been reset.
 - Storport performance optimizations are disabled.

- **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**
 - Lowered the amount of memory allocated in dump mode.
 - Fixed a rare case where adapter could go degraded after returning from sleep.
 - Added support for extracting a firmware core dump using the ATTO CLI Tool 'attrace'

- **Version 2.17 (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.
 - Added MSI support.
 - 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**
 - 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.
 - The maximum transfer size value has been lowered to 4MB.

- **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 02/11/2011)**
 - **Note:** It is recommended that firmware dated 02/11/2011 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 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 flashbundle using the ATTO Configuration Tool. Once the new firmware is flashed, "DO NOT REBOOT," the 2.00 driver should be loaded. Your system will appear to freeze for up to three minutes while the new driver is loaded. A reboot is required to use the new update."
 - **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.
- **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.

Known Issues/Advisements

- Occasionally, ExpressSAS R6xx RAID adapters installed in a Thunderbolt expansion chassis may experience a loss of connection to the host. This condition can be resolved with a cold system boot.
- See known firmware issues in the DOS release notes.

3. 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

4. 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