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Release Notes

s846 Series
1.8-Inch SAS and 2.5-Inch SAS
Solid-State Drives
Firmware E4YZ / E4Z1
Product Applications Engineering

Summary

FW Version(s):	E4YZ / E4Z1		
Date:	February 24, 2015		
Lifecycle:	LVM / GA		
Model Number(s):	Description	FW Version	Prior FW Version
s846E200M1	s846 Enterprise 1.8-Inch SAS, 6Gbps, 200GB MLC SSD	E4YZ	E4WM
s846E400M1	s846 Enterprise 1.8-Inch SAS, 6Gbps, 400GB MLC SSD		
S846E1600M2	s846 Enterprise 2.5-Inch SAS, 6Gbps, 1.6T MLC SSD	E4Z1	E4WP
s846E2000M2	s846 Enterprise 2.5-Inch SAS, 6Gbps, 2TB MLC SSD		

Change Summary for E4YZ / E4ZI

Category	Change Description
Resolved Issues	The firmware has been modified to fix an issue where an incorrect error status would be returned internally while processing multiple uncorrectable read errors. This issue would cause either a 0B/44 (timeout) or an assert condition and render the drive unresponsive to the host.
	The firmware has been modified to fix an issue that can could cause the timestamp to not be updated if write errors occur while the FW is padding the RAID stripe. This issue would cause the drive to become unresponsive to the host.
	The firmware has been modified to fix a timing issue that can would cause an assert condition while accessing a LBA that is already corrupted and needs to return a 03/11 sense code.
	The firmware has been modified to fix an issue where after BGMS would be triggered due to a shutdown/restart event, an internal infinite loop could occur if the backend is paused prior to completing the "first write" process of the FW. The infinite loop could have caused an internal timeout.
	The firmware has been modified to fix a timing issue where after a WRITE BUFFER command is aborted (due to a timeout such as 0B/44/00), while a FW download is in progress, the FW would not abort properly and the subsequent commands would result in check conditions of 06/3F/01.
	The firmware has been modified to use a parity-based methodology to update the metadata area when a stripe is being re-located due to a programming error.

Category	Change Description
	The firmware has been modified to fix a calibration issue that would incorrectly set certain flash operation values outside of optimal range if a power cycle occurred during calibration.
	The firmware has been modified to fix a timing issue where BGMS could interfere with other background processes and falsely set the drive into an unclean shutdown state, or would cause an assert condition during firmware download. This would cause the drive to report an unclean shutdown (04/BA/DA) on the next power cycle or firmware download.
	The firmware has been modified to abort a firmware download event if a truncated firmware image (incomplete image) was downloaded to the drive using Mode 5.
Improvement	The firmware has been modified to include additional checking of TCG ComPacket, Packet, and Subpacket length and transfer length fields.
	The firmware has been modified to provide more information during a flash operation timeout.
	The firmware has been modified to take into account bad blocks in the DEK storage area during a cryptographic erase.

Limitations and Known Issues

Note: To be addressed in future firmware releases.

Issue Summary	Severity	Recovery or Work Around
N/A	N/A	N/A

Firmware Update Exceptions and Special Instructions

Item	Exceptions	Special Instructions
Format/Sanitize	Required if the previous version of FW on the drive is earlier than E4WM/E4WP.	Sanitize the drive *before* upgrading.
Power Cycle	Required if the previous version of FW on the drive is earlier than E4WM/E4WP.	Power-cycle the drive *after* upgrading.
Backward Compatibility	This firmware is not backwards compatible with firmware earlier than E4WM/E4WP.	None.

Firmware Change History

Firmware Version	Release Date	Change Description
E4WM / E4WP	08/01/2014	- The firmware has been modified to fix a resource issue where the wear-leveling algorithm can schedule more resources than what is allowed after a backend suspend and resume operation. This issue could cause the drive to become unresponsive to the host and result in a command timeout. - The firmware has been modified to fix a calibration issue that could incorrectly set certain flash operation values outside of optimal range if a write error occurs during calibration. - The firmware has been modified to fix a resource issue that can cause the drive to not shutdown properly. The issue can occur when the FW suspends a host command and is waiting for resources that are locked when power is lost. - The firmware has been modified to optimize the shutdown process by removing unnecessary processes. This greatly reduced the time FW is using to properly shutdown the drive. - The firmware has been modified to provide more information during a flash operation timeout.

Revision History

Revision	Date	Page(s)	Description
-401	02/24/2015	All	Initial release.

Contact Information

General Information

Main Web Site: *http://www.hgst.com*

Technical Support

Main Support: *http://www.hgst.com/support*

Email Support and Telephone Support

Region	Email	Telephone
North America	*support_usa @hgst.com*	**Toll Free**: +1 888 426-5214 | **Direct**: +1 408 717-8087
Asia Pacific	*support_ap @hgst.com*	+65 6840 9595
EMEA / UK	*support_uk @hgst.com*	+44 20 7133 0032
Germany	*support_de @hgst.com*	+49 6929 993601

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