



Storage Work Group Storage Interface Interactions Specification (SIIS) FAQ November 2018

Q. What is the Storage Work Group?

A. The Storage Work Group is an organization within the Trusted Computing Group. It consists of TCG member companies with interests in the implementation of the Trusted Computing Group's methodologies for storage. For more information on the Storage Work Group, please see the documents at www.trustedcomputinggroup.org

Q. What is the TCG Storage Interface Interactions Specification?

A. SIIS specifies how the TCG Storage Core Specification and the Storage Security Class (SSC) specifications interact with industry standards for storage device interfaces and transports. It maps trusted storage device errors to interface-specific errors, maps interface-specific resets to device resets, describes interface-specific commands used to deliver commands to the device and retrieve data from the device, and interactions with some interface-specific features.

Q. Who would use the TCG SIIS document?

A. The TCG SIIS document should be used by anyone implementing a TCG Storage Core Specification and a TCG SSC (e.g. Optical, Opal or Enterprise SSC). The storage device interfaces supported include, but are not limited to ATA, SCSI, UFS, NVMe, eMMC and ATAPI.

Q. What is the relationship of the TCG SIIS document to other TCG specifications?

A. The SIIS document is currently referenced by the TCG Storage Architecture Core Specifications and by TCG Storage SSCs.

Q. Where can you obtain copies of the TCG SIIS document and related TCG specifications?

A. The SIIS document is available at www.trustedcomputinggroup.org



**Q. Have you taken into account existing standards such as those for SCSI and ATA?
How are you working with other standards bodies?**

A. Yes. The SIIS document was developed with advice from industry experts that are TCG members and participants in the JEDEC, NVM Express, and the INCITS T10 (SCSI) and T13 (ATA/ATAPI) standards committees.

Q. Will products based on the TCG SIIS work in today's PC architectures?

A. Yes. Operation in legacy environments was a primary concern in the development of the document.

Q. Does the TCG SIIS address flash drives and other portable storage devices?

A. Yes. The SIIS addresses any type of storage device on the supported interfaces, transports, and above mentioned SSCs.

Q. Does the SIIS describe the interaction between TCG security and interface-specific security protocols?

A. Yes. The interaction between the ATA security feature set and TCG security is described in the SIIS.

Q. Which versions of SIIS have been published and how do they differ?

A.

Version	Published	Summary of changes from the previous version
1.00	January 27, 2009	Initial version with interactions with ATA and SCSI interfaces.
1.01	November 3, 2011	<ol style="list-style-type: none"> 1) for all interfaces: added specification of Current Maximum LBA, clarified the specification of behavior when Transfer Length is zero; 2) ATA: changed the base ATA reference from ATA8-ACS to ACS-2, clarified the Locking Template interactions with the ATA Security feature set to include Locking SP activation and revert functions, clarified the use of the ATA Sense Data Reporting feature set in ATA error reporting, added specification of interaction of the ATA Sanitize Device feature set with the Locking SP 3) SCSI: added mapping of USB and UAS resets, clarified the use of INC_512, (Tables 4 and 5): indicated which standard or specification defines the event, and removed the false indication that all of the events were 'resets', (Table 7): changed TRANSFER LENGTH to ALLOCATION LENGTH and noted that the non-zero length requirement is a variance from the definition of the command in SPC-4;
1.02	December 30, 2011	<ol style="list-style-type: none"> 1) Support was added for the NVM Express (NVMe) interface.

Version	Published	Summary of changes from the previous version
1.03	April 17, 2015	<ol style="list-style-type: none"> 1) ATA: interaction of Enterprise SSC with the SANITIZE command; 2) SCSI: added UAS and UFS interfaces, interaction of Enterprise SSC with the SANITIZE command; 3) eMMC: added new support; 4) cross reference updates; and 5) minor some editorial cleanup.
1.03 Errata	August 5, 2015	<ol style="list-style-type: none"> 1) corrections to error mappings for NVMe.
1.04	August 18, 2015	<ol style="list-style-type: none"> 1) ATA: interactions between Opal SSC and the Sanitize Feature Set, modifications to the interactions between Enterprise SSC and the Sanitize Feature Set, 2) NVMe: reset mappings, corrections to NVMe error mappings, 3) cross reference updates; and 4) minor some editorial cleanup.
1.05	March 16, 2016	<ol style="list-style-type: none"> 1) NVMe: indicating that the NSID field is 'reserved' in the IF-SEND and IF-RECV commands, added Invalid Security State and Access Denied to the error translation table, introduction of Namespace Management interactions, changes to the interactions with the Format NVM command, 2) cross reference updates; and 3) minor some editorial cleanup.

Version	Published	Summary of changes from the previous version
1.06	May 12, 2016	<ol style="list-style-type: none">1) definitions for 'Opal family', and 'Locking SP is owned';2) interactions with ATA: Zoned Block devices, the SET SECTOR CONFIGURATION EXT command,3) interactions with SCSI: Zoned Block devices, the FORMAT UNIT command,4) interactions with NVMe: resets, use of NSID in IF-SEND and IF-RECV commands, the MBR shadow, all NVMe commands with the with the ReadLocked and WriteLocked columns in the Locking table, the Deallocate subcommand of the Dataset Management command;5) cross reference updates; and6) minor some editorial cleanup.

Version	Published	Summary of changes from the previous version
1.07	August 4, 2017	<ol style="list-style-type: none"> 1) interactions with ATA: Zoned ATA devices, Opal family and the Security feature set, DATA SET MANAGEMENT commands; 2) interactions with SCSI: READ LONG and WRITE LONG commands, Zoned Block devices, verify commands, UNMAP commands, extended copy operations; 3) interactions with NVMe: resets, use of NSID in IF-SEND and IF-RECV commands, the DO NOT RETRY bit in error reporting, use of the Operation Denied error code, Namespace Management and the case where there are no namespaces defined, Opal family with the Sanitize command; 4) all commands for ATA/SCSI/NVMe defining their interactions with the ReadLocked and WriteLocked columns in the Locking table; and 5) cross reference updates; and 6) minor some editorial cleanup.
1.08	August 14, 2018	<ol style="list-style-type: none"> 1) definition of "user data removal methods"; 2) interactions with ATA: storage element depopulation; 3) interactions with SCSI: storage element depopulation, READ STREAM(16), WRITE STREAM(16), READ LONG commands; 4) interactions with NVMe: Format NVM command; and 5) cross reference updates; and 6) minor some editorial cleanup.

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