Storage Interface Interactions Specification (SIIS) FAQ

April 2026

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, *e*•MMC 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.

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

Version	Published	Summary of changes from the previous version
1.09	Oct. 26, 2020	1) converted to the new official TCG style template 2) Editorial: added cross references, fixed spelling, grammar, and formatting, updated approved references 3) ATA: a. Commands: OPEN ZONE EXT, REPORT REALMS EXT, REPORT ZONE DOMAINS EXT, ZONE ACTIVATE EXT, ZONE QUERY EXT, RESTORE ELEMENT AND REPOPULATE, MUTATE EXT 4) SCSI: a. Commands: EXTENDED COPY, FORMAT WITH PRESETS, REPORT ZONE DOMAINS, REPORT REALMS, ZONE ACTIVATE, ZONE QUERY, RESTORE ELEMENTS AND REBUILD b. Resets: distinction between reset actions for single port and dual port, 5) NVMe: a. Commands: NVMe-MI Send, NVMe-MI Receive, Namespace Management 6) interactions with TCG Storage Feature Set ShadowMBR for Multiple Namespaces
1.10	Nov. 14, 2021	1) Conventions section: scope, keywords, lists, numbering, bit conventions, number range convention 2) Editorial: added cross references, fixed spelling, grammar, and formatting, updated approved references 3) Additional Methods Status Code 4) Level 0 Discovery – SIIS Feature Descriptor, and the Zoned Block Devices (KEY CHANGE ZONE BEHAVIOR bit 5) Clarifications about the GenKey method and LBA range boundaries 6) ATA: a. Commands: REMOVE ELEMENT AND TRUNCATE b. Interactions with Zoned Block devices 7) SCSI interactions: a. added TPer scope, b. interactions with Zoned Block Devices 8) NVMe interactions: a. TPer scope, b. Commands: NVMe-MI Reset comand, Verify, Copy, Compare, Dataset Management, NVMe-MI Send, NVMe-MI Receive, Zone Append, Zone Management Send, Zone Management Receive c. changed some requirements to apply to the TPer instead of the NVM Subsystem, d. Opal interactions with the NVMe Namespace Write Protection feature, 9) *e*•MMC interactions: TPer scope

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Version	Published	Summary of changes from the previous version
1.11	March 14, 2023	1) updated the data removal method definition 2) Editorial: added cross references, fixed spelling, grammar, and formatting, updated approved references 3) new defined terms 4) Level 0 SIIS feature descriptor: added Identifier Usage Scope 5) ATA: a. Opal family with REMOVE ELEMENT AND MODIFY ZONES, Enterprise SSC with REMOVE ELEMENT AND MODIFY ZONES, b. Commands: MUTATE EXT, REMOVE ELEMENT AND MODIFY ZONES 6) SCSI: a. reservations, b. support for more than one Logical Unit, c. Opal family with REMOVE ELEMENT AND MODIFY ZONES, d. Enterprise SSC with REMOVE ELEMENT AND MODIFY ZONES, e. Commands: REMOVE ELEMENT AND MODIFY ZONES, FORMAT WITH PRESETS 7) NVMe: a. Resets: mapping of NVM Subsystem Reset, NVMe-MI Reset, split NVMe-MI resets from PCIe resets, b. Added Namespace ID for Security Protocols 1 and 3 c. Added new Security Protocol 3 for Key per I/O d. IF-SEND/IF-RECV support for SPID=3 for Key Per I/O commands, e. Added support for Reservations f. added 2 new TPer error codes, g. Commands: Format NVM, h. updated interactions with the NVMe Namespace Write Protection feature, updated interaction with the Deassign method 8) New NVDIMM-N interface support 9) New SD card interface support

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1.20	September 4, 2025	1) General a. Editorial: added cross references, fixed spelling, grammar, and formatting, updated approved references b. Reorganized the Scope and Conventions sections c. Self references were changed from 'this standard' to 'this specification' d. Added 2.3.6 Specify and Indicate Conventions e. Reorganized the References section to separate approved references and relevant draft documents f. Changed 'TPer Errors' to 'TPer Interface Status Codes', and other language changes linked to the new draft Core Spec 2) Overview a. Added 3.3 Key Per I/O SP Ownership b. Added requirements to 3.4 User data removal method c. Clarified the Key Change Zone Behavior bit d. Added Identifier Usage Scope e. Added NSID Usage scope for reservations 3) SCSI a. Corrected the Reference column for UAS, USB, and UFS resets b. Moved padding requirements to here from the Core Spec c. Added mapping of IF-FWCOMMIT d. Updated 4.7.7 Interactions with Zoned Block devices e. Added 4.7.12 Interaction with Storage Element Depopulation Operations, and reorganized subclauses f. Added 4.7.13 Interface command actions with user data removal methods g. Updated 4.7.14 Interactions with the FORMAT WITH PRESET command h. Clause 10.1: added cmd: RESTORE ELEMENT AND REBUILD 4) ATA a. Moved padding requirements to here from the Core Spec b. Added 5.4 Mapping of IF-FWCOMMIT c. Updated 5.7.3 Interactions with Zoned Block devices d. Added 5.7.6 Interactions with Storage Element Depopulation Operations, and rearranged subclauses e. Added 5.7.7. Interface command interactions with user data removal methods f. Clause 10.2: added cmd: RESTORE ELEMENT AND REBUILD 5) NVMe a. Updated 6.1 Scope to indicate items not in scope of the TPer, and to clarify that only LBA-based namespaces are in scope b. Table 23: clarified the uses Security Protocol=02h and 03h. c. Added 6.4 Mapping of IF-FWCOMMIT d. 6.7.1.4.4 updated Geometry reporting feature descriptor with multiple namespaces

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		e. Updated Locking Template interactions with the Format NVM command f. Updated 6.7.6 Interactions of the Opal Family with Namespace Write Protection g. Updated 6.7.8 Interactions with Zoned Namespaces h. Updated 6.7.9 Interactions with the Verify command i. Clause 10.3: added cmds: I/O Management Receive, I/O Management Send 6) NVDIMM a. Removed reference to JESD245D (replaced by revision E) 7) SD-card a. 9.5.1 Security Protocol Information: changed ‘the host should issue CMD23' to ‘the host can issue CMD23’ 8) Added new clause 11 Key Per I/O SP Interactions

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