

# TCG – OPAL WHITEPAPER

Whitepaper

Document #AN0026 – Viking SSD TCG OPAL | Rev. A



A RF, Optical, Microelectronics  
and Memory Company

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## 1 TCG Introduction

Trusted Computing Group (TCG) is an international industry standards group. The TCG develops specifications amongst its members and publishes the specifications (i.e. Opal Security Subsystem Class) for use and implementation by the industry. The Storage Workgroup specification provides a comprehensive architecture for putting storage devices under policy control as determined by the trusted platform host.

In other words, Opal SSC defines standards for creating and managing interoperable SED's (Self-Encrypting Drives) for the protection of user data from compromise due to the loss, theft, repurposing or end of life of the storage device. Implementation of the TCG Opal 1.0 SSC specification enables integrated encryption and access control within the protected hardware of the drive.

### 1.1 TCG Opal Features

The following list summarizes the TCG Opal features:

- Backward compatible to features in Opal 1.0
- Shadow MBR for pre-boot authentication
- Support for 4 independently encrypted LBA ranges/bands
- Provides IT administrative functions (access controls) for user enrollment/media management
- Hardware based encryption
  - Compatible with any OS
  - Transfers the computational load of the encryption process to the FSP, cutting the stress on the host system's CPU
  - Encryption is "always-on". Keys for encryption are generated in the drive and never leaves the drive.
  - DMA attached/cold-boot attacks are prevented since encryption/decryption keys are stored in the FSP
- Compatibility with certifiable ISV's: Winmagic, Wave, McAfee

## 2 Related Documents

- TCG Storage Security Subsystem Class (SSC) Opal Specification that can be found at Trusted Computing Group website at [www.trustedcomputinggroup.org](http://www.trustedcomputinggroup.org)

- [http://www.trustedcomputinggroup.org/files/resource\\_files/B15F1F8F-1A4B-B294-D03F09D5122B21F6/Opal\\_SSC\\_2%2000\\_rev1%2000\\_final.pdf](http://www.trustedcomputinggroup.org/files/resource_files/B15F1F8F-1A4B-B294-D03F09D5122B21F6/Opal_SSC_2%2000_rev1%2000_final.pdf)

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