**TECHNOLOGY BRIEF**
**Intel® Solid-State Drive 520 Series**
Non-Volatile Memory Storage Solutions from Intel

# Data security features in the Intel® Solid-State Drive 520 Series

***Enhanced security features for your peace of mind***


As Solid-State Drives become the storage of choice for PCs worldwide, professionals and consumers are requiring enhanced security features to help protect their data. Today's security environment requires multiple tiers of protection. While one tier helps protect against malicious software attacks, another tier addresses the physical protection of stored data in the event that a PC is lost or stolen.

Intel continues to support enhanced security features in its latest generation of Solid-State Drives (SSD). This technology brief describes how the Intel® SSD 520 Series uses the Advanced Encryption Standard (AES) and ATA drive password to help protect a user's data.

## Encryption in the Intel SSD 520 Series

Encryption converts data to an unintelligible form. The only way to decrypt the data to its original form is by the use of a special *key*.

The Intel SSD 520 Series offers this encryption/decryption feature according to the Advanced Encryption Standard (AES). The AES encryption standard, defined in the Federal Information Processing Standards (FIPS) Publication 197, is widely accepted and used in the PC industry for encryption of user data.

## Physical Security Layer of Protection

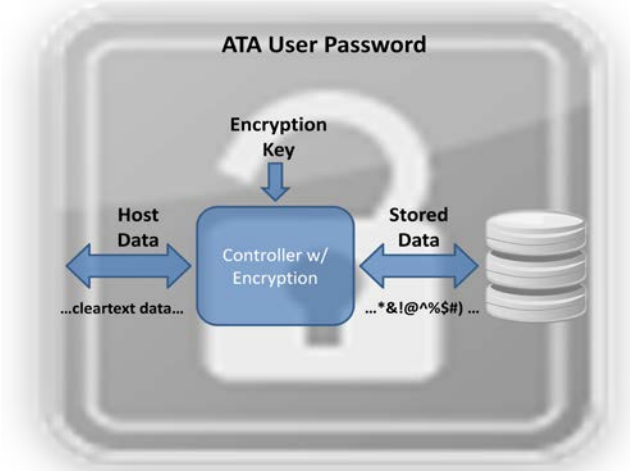
AES implementation in the Intel SSD 520 Series provides a hardware-based mechanism for encryption and decryption of user data without performance impact.

Encryption is only as good as the key used for the encrypting. The key is a packet of information that is used in the encryption process to encode/decode the data. If a person does not have this key, then the data cannot be deciphered and understood. The stronger the key, the more difficult it is for an attacker to break the key and decode the data. The AES implementation in the Intel SSD 520 Series drive uses a 128-bit key.

Each Intel SSD 520 Series has a unique key when it leaves the factory. The user can simply start using the SSD and data is encrypted with that unique key.

However, if the user prefers a new key, one can be generated by executing a Secure Erase or Enhanced Secure Erase on the SSD. Secure Erase and Enhanced Secure Erase are part of the security features in the ATA ACS2 specification, administered by Technical Committee T13 of the International Committee on Information Technology Standards (INCITS). Secure Erase can be performed using the Intel® Solid-State Drive Toolbox. Download the Intel SSD Toolbox, free of charge, at: www.intel.com/go/ssdtoolbox.

To complete the physical security layer of protection, encryption needs to be paired with an ATA user password (also known as the drive password). The drive password is a security feature of the ATA specification. Unlike encryption, which is automatically enabled on the Intel SSD 520 Series, the drive password must be set by the user via the BIOS configuration. (For more information on setting the drive password, check the computer documentation or contact the computer manufacturer customer support.) The drive password is required each time the drive is powered on, so authentication is required by the user to access data on the drive.




## Added Peace of Mind

In the event that a PC without encryption and a drive password is accidentally lost or stolen, the data is not protected and anyone who can access the media can read out the data. The Intel SSD 520 Series is equipped with AES encryption that, when paired with a user-selected drive password, can give you an important security advantage. Encryption in the Intel SSD 520 Series works out-of-the box, and once you enable the drive password, you can have the confidence and peace of mind that your data is being safeguarded by these security measures.

Solid-State Computing Starts with Intel Inside.® For more information, visit www.intel.com/go/ssd



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