

## TECHNOLOGY BRIEF

### Intel® Solid-State Drive 320 Series

Non-Volatile Memory Storage Solutions from Intel



# Data security features in the Intel® Solid-State Drive 320 Series

Added confidence that your stored data is being protected.



With PCs continuing to grow and users storing more data than ever before, consumers are more susceptible to losing valuable information. Protection of a user's data benefits from multiple tiers of security. While one tier helps protect against malicious software attacks, another tier involves the physical protection of stored data in the event that a PC is lost or stolen.

This technology brief describes how the Intel® Solid-State Drive 320 Series (Intel® SSD 320 Series) uses the Advanced Encryption Standard (AES) and ATA drive password to add a physical security layer to help protect a user's data.

## No Protection is Bad Protection

Typical storage drives do not alter the data they receive. The devices simply take the data sent to them by the host and write it to the storage media. In the event that a PC is accidentally lost or stolen, the data is not protected — anyone who can access the media can read out the data. But what if that data was scrambled such that accessing the media would return gibberish instead of data? This is the idea of encryption.

## Encryption in the Intel SSD 320 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.

This encryption/decryption feature has now been added to Intel's solid-state drive product line with the implementation of the Advanced Encryption Standard (AES) in the Intel SSD 320 Series. This 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 320 Series provides a hardware-based mechanism for encryption and decryption of user data without performance impact.

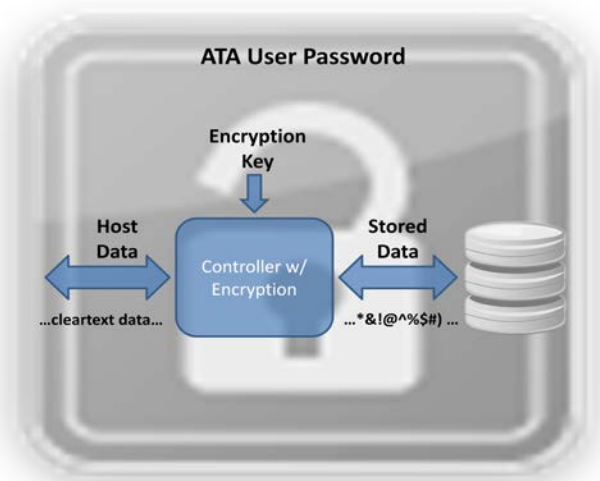
Encryption is only as good as the key used for the encrypting. The key is a packet of information that is used in the encryption process to encode/decode the data. If a person does not have this key, then the data cannot be deciphered and understood. The stronger the key, the more difficult it is for an attacker to break the key and decode the data. The AES implementation in the Intel SSD 320 Series drive uses a strong 128-bit key.

Each Intel SSD 320 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 specification. 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](http://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 320 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

The Intel SSD 320 Series is equipped to give you an important security advantage. Encryption in the Intel SSD 320 Series works out-of-the box, and once the drive password is enabled, you have the added 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](http://www.intel.com/go/ssd)

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