

The End-of-Life Dilemma of Solid State Drives

Data Killers, a nationwide destruction company specializing in on-site shredding of hard drives, tapes, products and equipment, uses industry research and a review of the University of California San Diego's study of solid state hard drives to recommend the best practices for destroying solid state hard drives.

The use of solid state hard drives (SSDs) is growing in popularity over the use of hard disk drives (HDDs). SSDs use NAND flash memory to read/write data as opposed to the spinning platters used in HDDs. SSDs have better performance with lower access time and latency. SSDs work so well at storing data that it is difficult to erase these drives. Many standard sanitizing techniques that are used on HDDs are not as effective on SSDs, primarily because of the SSDs' use of flash memory.

The flash memory used by SSDs (and indeed in all storage that uses flash memory, such as USB drives) is used in a write-once, read-many-times, erase cycle. The write/read part of the cycle operates on 4KB pages, but the erase part operates on 128KB blocks. The problem with flash memory is that the erase process is slightly destructive, with two results: first, that each block has a limited life-span, and second, the controller will preferentially copy existing pages of data elsewhere on the drive rather than cause blocks to be erased. This means that frequently updated data is necessarily duplicated across the drive.

Studies on reliable methods of erasing SSDs performed at the University of California San Diego have also arrived at the conclusion that reliable SSD sanitization can be difficult to achieve. Since SSDs are so difficult to erase, technology professionals are faced with the dilemma of how to securely dispose of SSDs at the end of their life-cycle. Degaussing techniques are not effective because SSDs do not use magnetic formatting.

In order to guarantee secured disposal of the drive, to comply with corporate and government data destruction mandates, SSDs must be shredded to tiny pieces. 10mm (about the size of a dime) seems to be the accepted industry standard except for classified SSDs which must be dealt with in accordance with NSA/CSS declassified procedures. Shredding to 10mm is also the industry standard for other solid state storage devices like: Random Access Memory, Read Only Memory, Field-Programmable Gate Array, Flash Memory, and Smart Cards.

Data Killers provides nationwide, on-site destruction of any type of equipment or media with assured compliance and the ability to shred material to 10mm or as small as 2mm sizes (with advanced notification). Data Killers is the data and product destruction arm of Turtle Wings, Inc., an ISO certified, woman-owned, HUBZoned company holding multiple GSA contracts.

For more information contact our office at 301-583-8399 or visit www.DATAKILERS.com.