



Are Multiple Overwrite
Passes Necessary?

Summary

WhiteCanyon Software recommends using a single pass as standard practice for sanitizing hard drives. This significantly reduces the wipe time while still rendering the data irrecoverable. Performing multiple wipes as part of a multi-pass overwrite pattern is unnecessary to make data irrecoverable. WhiteCanyon Software only recommends using multiple passes if required as part of your organization's policy or for special use cases where multiple redundancies are desired.

THE ORIGIN OF MULTIPLE PASSES

The idea that multiple wipe pass are required to render data irrecoverable originates in part with a 1996 study published by Peter Gutmann who suggested that data should be wiped up to 35 times in order to be rendered irrecoverable. He proposed that data could be recovered using magnetic force microscopy (MFM) and scanning tunneling microscopy (STM) techniques. However, modern hard drives over the last 10-15 years have advanced in technology to the point where the MFM and STM techniques have become obsolete. Specifically, part of Gutmann's claim was that the head positioning system in hard drives was not precise enough to overwrite new data on top of the exact position of the old data, thus creating the possibility that the old data would remain intact. Today's hard drive technologies are very precise and have eliminated this possibility.

GOVERNMENT STANDARDS

Various domestic and international government standards such as the DoD 5220.22-M and the NSA 130-1 have required multiple passes when sanitizing data storage. Many organizations have to comply with these standards as a matter of policy and data erased using these standards is certainly irrecoverable. However, from a data sanitization perspective there is no proven need to wipe using more than one pass. In fact the National Institute of Standards and Technology (NIST) states in their "Guidelines for Media Sanitization (SP 800-88) states that the "NSA has researched that one overwrite is good enough to sanitize most drives."

COMPANIES USING A SINGLE PASS WIPE

It is a common best practice to use a single pass for hard drive sanitization. As an example, the following organizations are currently using a single pass:

- Bank of America
- Deloitte
- Merck Pharmaceuticals
- Goldman Sachs
- Department of Homeland Security