

Re: Advice regarding servers and Wiping Drives after testing

Source: <http://www.derkeiler.com/Mailing-Lists/securityfocus/security-basics/2007-09/msg00076.html>

- *From:* Robert Inder <robert@xxxxxxxxxxxxxxxxxxxxx>
 - *Date:* 12 Sep 2007 12:21:18 +0100
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Ansgar -59cobalt-
Wiechers writes:

> Date: Sun, 2 Sep 2007 20:17:06 +0200
> To:
> Subject: Re: Advice regarding servers and Wiping Drives after testing

>> I see osx disk utility can with write zeros once, or write zeros many
>> times. Is there any advantage in multiple writes?

> The magnetic media in your harddisk are analog, so even after
> overwriting the media with zeroes there may be some residual magnetism
> left from which the original data might be reconstructed. However, that
> will require opening the case and examining the actual platters with
> Magnetoforce Microscopy or something.

I had heard it was easier than that.

Looking at the analog properties of the signal produced by the normal read head is sufficient. The signal produced by a 1 written over a 0 is subtly different from the signal from a 1 written over a 1. And, indeed, a 1 written over a 1 written over a 1 is itself subtly different from a 1 written over a 1 written over a 0.

So just looking at the precise voltage coming out of the drive's own read head lets you reliably "see" back a number of "generations".

If that is true, just adding some new digitising electronics to the drive would let you read its previous states at normal drive access speed. In which case I'd be very surprised if various government agencies (at least) don't have the wherewithall to analyse a drive very quickly.

The random variability associated with (enough) multiple re-writes would mask these effects.

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Robert.

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