



Enterprise Data Erasure

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Enterprise Data Security

- In the Enterprise space, data protection is a big deal
 - Data storage is no less a big deal
- Encryption is one way
 - But it's not seen as the final solution
 - “I can break encryption we used 10 years ago with my phone”
 - Also, the ease of accessing data on flash chips is so easy

- The act of permanently erasing data is called “data eradication”
- In enterprise installations data eradication is usually performed by a specialist
 - Maybe the vendor or a 3rd party
 - At Hitachi, Revert Inc. is our data eradication partner
- Proper Data Eradication involves 3 steps

3 Step Process

- First, erase the data
 - For HDDs this involves overwriting with, for instance, a DoD pattern
 - For Solid State (especially NAND) just assert the Block_Erase signal and the data is gone
- Second, verify data has been erased
 - For HDDs, just read every sector, maybe generate a checksum
 - For SSS, it's a gray area
- Third, generate a certification



What are the problems for Solid State?

- How to access the overprovisioning area?
 - In the lab, a processor ICE or a JTAG port might do the trick
 - In the field we need standard method
- Does the vendor Secure Erase process really erase everything?
 - Some flash controllers erase their encryption key
 - Others erase the translation table
 - Only a physical assertion of Block_Erase is sufficient

How to fix the Verify problem?

- 2 Ideas
 - Remap a SCSI command (like Physical Read Long)
 - This would allow addressing via SCSI to access the capacity + overprovisioned space
 - Second LUN that allows access to the whole raw flash array.
 - This would be a whole other LUN that allows READ access to the capacity + overprovisioned space
- Access to these methods would have to be protected
 - They only work immediately after a Secure Erase



Hitachi Data Eradication Support

- With VSP G1000, Hitachi is deploying an advanced, next gen Flash Module Drive
 - Features include FMD-based offline compression and Parity Offload*
 - Also, full Data Eradication services will be supported
- Support of Enterprise Class performance, HA and data protection.

* Hitachi Patented Technology



Thank You!

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<http://www.hds.com/go/flash-forward/>