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Degree Project

The differences between SSD and HDD technology regarding forensic investigations

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Abstract

In the past years solid state disks have developed drastically and are now gaining increased popularity compared to conventional hard drives. While hard disk drives work predictable, transparent SSD routines work in the background without the user's knowledge.

This work describes the changes to the everyday life for forensic specialists; a forensic investigation includes data recovery and the gathering of a digital image of each acquired memory that provides proof of integrity through a checksum. Due to the internal routines, which cannot be stopped, checksums are falsified. Therefore the images cannot prove integrity of evidence anymore. The report proves the inconsistence of checksums of SSD and shows the differences in data recovery through high recovery rates on hard disk drives while SSD drives scored no recovery or very poor rates.

Preface

As a computer science student I specialized in network security and digital forensics and am always interested in the newest technology. I came across the video of Scott Moulton and his speech at DEFCON in Las Vegas, “Solid State Drives Destroy Forensic & Data Recovery Jobs” which sparked my interest in the topic SSD drives and data recovery. It surprised me that there was not much documentation and even less test cases to be found when I first researched the problem which led me to the idea of conducting tests myself. This works aim is to fill this gap and to encourage further testing and research.

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