



Data Loss and Recovery in an SSD/Flash-Based World

Solid State Drive (SSD) technology is becoming increasingly prevalent as data storage companies and laptop/notebook manufacturers integrate it into their business solution portfolios and consumer products. SSD technology allows these companies to take advantage of improved read/write performance, efficient heat dissipation, lower energy consumption, and decreased physical size. Further, the portability of Flash-based storage has made it a popular choice for anyone using a mobile device; from digital cameras to tablets.

Despite the many benefits of this technology, SSD/Flash storage devices can suffer many of the same causes of data loss as traditional storage devices, such as: hardware failure, human error, computer viruses, power surges, natural disasters, or software/program corruption. With the accelerated use of Flash memory to store electronic files, the [incidence of data recovery from SSD/Flash is increasing](#).

Challenges in SSD/Flash Recovery

In the most complex cases, data recovery from SSD/Flash storage can be extremely time-consuming because wear leveling and individual memory chips functioning in a RAID-like configuration create additional challenges in piecing the data back together. Other data recovery challenges include:

- Proprietary data organization
- Address line complexity (microprocessor communication routes)
- Flash memory chip density (number of flash chip configurations within an array)
- Implementation of customized wear leveling algorithms
- Error correction code variables
- Encryption and encoding variations

Ontrack Data Recovery engineers have specialized capabilities to improve recovery rates while decreasing the average time per recovery.

The Kroll Ontrack Difference

Ontrack® Data Recovery experts have extensive experience in SSD/Flash data recovery and have developed industry leading capabilities to improve recovery rates while decreasing the average time per recovery. Ontrack Data Recovery engineers pioneered a unique toolkit to offer customers a higher recovery success rate and quicker data-retrieval turnaround time, while increasing the integrity of the information recovered.

The list below highlights just a few examples of recoverable data sources:

Smart Phones & Mobile Phones	Digital Cameras & Digital Players	Memory Cards & Flash Drives	Tablets & E-Readers
BlackBerry®	iPod®	SD Media (mini, micro)	Apple iPad®
iPhone®	MP3 Player	SmartMedia	Samsung®
Android™	Digital Camera	xD Media	Kindle™
Windows	Video Recording Device	Compact Flash	Android OS
		USB Flash Drive	
		Memory Stick	
		PC Cards (PCMCIA)	

In addition to offering data recovery service on mobile devices, tablets, smartphones, iOS devices, SD cards and USB drives, our global network of research and development engineers have the unique ability to create custom tools that allow us to provide individualized, custom recovery solutions for unique data loss devices and situations.

Service You Can Depend On

For more than 25 years, Kroll Ontrack has been analyzing data structures, performing cleanroom recoveries and continuously investing in research and development. Leveraging that experience, Ontrack Data Recovery engineers help customers understand and manage the challenges associated with SSD/Flash recovery, and can successfully recover data from SSD/Flash-based devices.

Additionally, as part of our standard service, we provide comprehensive evaluations and detailed file reports of the files that can be recovered. This allows you to make an informed decision before purchasing an actual recovery. Once media is received, you can use our Data Recovery Customer Portal to securely view the status and progress of your job in real time.

What can we do for you?

- Recover data from virtually any type of data storage device – including Flash and SSD drives
- Minimize downtime through fast turnaround times, emergency service options and lab-quality remote data recovery service
- Report all recoverable files and the condition of each file before you pay for your recovery
- Track the progress of your recovery online in real time through our Data Recovery Customer Portal
- Protect your valuable data from unauthorized access through strict security protocols
- Create hundreds of customized recovery tools and methods for unique data loss devices and situations via our global network of 200+ research and development engineers

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