

# SSDkeeper™

## Overview

Conduktiv's SSDkeeper™ guarantees to boost the performance of Windows PCs and physical servers with “faster than new” performance, or your money back for 90 days—no questions asked. SSDkeeper also extends the life and longevity of solid-state drives (SSDs) by reducing the amount of Program/Erase (P/E) cycles required when writing files. SSDkeeper runs quietly in the background, without hampering system resources, and performs all optimizations automatically in real-time.



## Patented Write Optimization

SSDkeeper's patented write optimization engine prevents excessively small, fragmented writes that rob the performance and endurance of SSDs. SSDkeeper ensures large, clean contiguous writes from Windows, so maximum payload is carried with every input/output (I/O) operation. By eliminating the “death by a thousand cuts” scenario of many, tiny writes and reads that slow system performance, the lifespan of a SSD is also extended due to significant reduction in write amplification issues that plague all SSD devices. Since SSD devices can only handle a finite number of writes before failing, SSDkeeper limits write amplification issues associated with small, fractured writes that inflate the amount of P/E cycles performed to process files.

## Patented Read Optimization

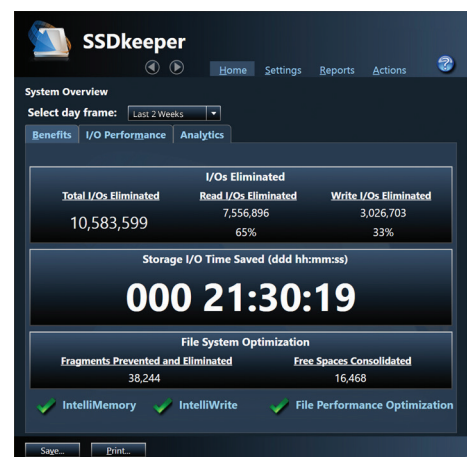
SSDkeeper electrifies Windows system performance further with an additional patented feature—dynamic memory caching. By automatically using idle, available DRAM to serve hot reads, data is served from memory, which is 12–15X faster than SSD and further reduces wear to the SSD device. The real genius in SSDkeeper's DRAM caching engine is that nothing has to be allocated for cache. All caching occurs automatically. Diskeeper dynamically uses only the memory that is available at any given moment and throttles according to the need of the application, so there is never an issue of resource contention or memory starvation. If a system is ever memory constrained at any point, SSDkeeper's caching engine will back off entirely. However, systems with just 4GB of available DRAM commonly serve 50% of read traffic. It doesn't take much available memory to have a big impact on performance.

Since SSDkeeper is transparent, “set-and-forget” software, and operates with near zero overhead as a lightweight file system driver, organizations achieve significant performance gains without management or system resource overhead.

## Enhanced Reporting

If you never knew how much Windows inefficiencies were robbing system performance, SSDkeeper tracks time saved due to elimination of small, fragmented writes and time saved from every read request that is served from DRAM instead of being served from the underlying SSD. SSDkeeper enables users to see what percentage of all write requests are reduced by sequentializing otherwise small, fractured writes and what percentage of all read requests are cached from idle, available DRAM.

SSDkeeper provides the same core patented functionality as Diskeeper 16 (minus defragmentation features that are only applicable to hard disk drives). That being said, the benefit of these features to a SSD device is more than just improved write and read performance—it is improved longevity.



## Features

**IntelliWrite<sup>®</sup> write I/O optimization technology** prevents files from being fractured and broken apart into pieces, with each piece requiring its own I/O operation before being written to SSD in a non-sequential manner. This reduces write amplification issues that shorten SSD lifespan, and boosts system performance, with fewer I/O operations required to process any given file.

**IntelliMemory<sup>®</sup> read I/O optimization technology** intelligently caches active data from read requests using idle, available memory. Nothing has to be allocated for cache since IntelliMemory is aware moment by moment of how much memory is otherwise idle and available to be used for cache. This further reduces I/O overhead to the underlying SSD device, enabling systems to serve read requests from DRAM, which is 12–15X faster than SSD.

**InvisiTasking<sup>®</sup> intelligent monitoring technology** allows all SSDkeeper operations to run silently in the background with near-zero impact on compute resources. In the rare instance a system maxes out compute resources, SSDkeeper operations will back off entirely. InvisiTasking ensures SSDkeeper runs quietly without any visible intrusion on activities.

**Benefit Reporting** dashboard displays the actual “time saved” benefit on every system so the value is easily quantifiable and never in question. See exactly how many write I/Os and how many read I/Os are eliminated from going down to the SSD device, what percentage of read and write traffic is offloaded from the underlying SSD and, more importantly, how much I/O time that saves any one system or group of systems over any time period.

**I/O Performance Monitoring** reveals key performance metrics like IOPS, throughput, and latency. It reveals the amount of workload processed on the local system for any given time period. It also provides important memory usage information like total physical memory and min/max/avg of available memory and how much of that was used for cache. If there is not sufficient available DRAM, users are not getting the best performance possible from SSDkeeper.

**Analytics** provides an hour-by-hour view for any time period to understand exactly what is happening on the local system related to key metrics like workload, read/write percentage, IOPS, throughput, I/O response time, and benefits like write I/O reduction from IntelliWrite and read I/O reduction from IntelliMemory.

**Free Space Consolidation Engine** swiftly consolidates free space to ensure any new writes are performed optimally and lowers the program/erase (P/E) cycles that result in write amplification issues that reduce SSD longevity.

**Network management support** ensures easy management and deployment of SSDkeeper to hundreds or thousands of PCs or physical servers via the Diskeeper 16 Administrator management console.

## About ConduSiv

ConduSiv<sup>®</sup> Technologies is the world leader in software-only storage performance solutions for virtual and physical server environments, enabling systems to process more data in less time for faster application performance.

## SSDkeeper Benefits

- Keep Windows systems running faster than new
- Improves business productivity and extends the life of SSDs
- Prevents fragmentation at the Windows OS level
- Caches hot reads with idle DRAM
- True “Set It and Forget It” management
- Deploys to hundreds or thousands of servers or PCs in a few clicks via the centralized management console

## System Requirements

250MB of available space.  
IntelliMemory caching requires a minimum of 3GB of memory on the system and at least 1.5GB of idle, available memory before caching will initiate.

## Supported Platforms

Windows 7 and above for Client OS  
Windows Server 2008r2 and above for Server OS

## More Information

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