

Storbyte Solves The 'Garbage Collection', 'Write-Cliff', 'Write Amplification', 'Over Provisioning' Solid-State Storage Problem

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Storbyte

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WASHINGTON, June 5, 2018 /PRNewswire/ -- [Storbyte](#), developer of a new design in flash storage hardware, today announced it has solved the solid-state storage 'write cliff' problem without the overprovisioning or complex workarounds required by flash array vendors.

Write-cliff conditions are all too familiar to flash storage manufacturers, as is the common performance and endurance deficiencies it causes in all solid-state drives.

When the cells/pages within a solid-state drive begin to reach 40% to 50% capacity, the users will begin to recognize a decrease in performance. The performance of Flash Memory will drastically decrease due to an internal process called garbage collection, a direct result of managing partially populated pages within the Flash Memory blocks, identifying and redistributing data from partially populated pages. To mitigate the problem, all-flash array manufacturers typically overprovision their products between 30 to 40 percent or more, incurring additional cost for the end user.

Storbyte has addressed this problem at the source, utilizing patented mathematics and algorithms inside its ECO•FLASH™ drive. This process referred to as it's Hydra Distributed Resource Utilization provides the ability to utilize commodity-based flash memory modules and its patented ECO•FLASH technology to distribute the workload at a true cost correct price point. Storbyte's integrated circuit solution is combined with industry-exclusive parallel write algorithms to distribute the data across 16 independent SSD memory modules. This parallel data

striping model provides a 16x performance increase compared to a single target while presenting to the host system a single flash storage device. Based on the Hydra's performance advantage the ECO•FLASH architecture virtualizes and eliminates the " Partial Page File " problem virtually eliminating the garbage collection condition associated with all conventional flash memory. This greatly reduces the P/E cycles, Program/Erase cycles extending the life of the memory well beyond conventional flash memory models.

"In the right use cases solid-state arrays are much more responsive than their spinning disk equivalents. However, in write intensive environments the performance of these system over time can degrade between 20% to 30%. Most users will validate initial performance of their systems but many users do not audit performance as their systems fill up. In environments that demand performance this is unacceptable, said Diamond Lauffin, Storbyte Chief Evangelist Officer. "Systems based on the ECO•FLASH technology will provide a key cost benefit by eliminating the garbage collection condition and overhead with no overprovisioning providing 100% performance at a net 100% capacity. Compared to alternative methods that require out of band, abstracted software layers and their associated additional hardware costs ECO•FLASH users get the benefit of an inline, real-time on board solution and the system / drive performance they see on day one will be the same performance for the life of their system guaranteed.

To request a white paper with further details on how ECO•FLASH drive eliminates write cliff and the associated garbage collection conditions, contact Storbyte at info@storbyte.com.

About Storbyte

Storbyte, headquartered in Washington D.C., manufactures enterprise storage arrays that offer performance, power management, reliability, density, efficiency, flexibility and affordability. Storbyte has built a dramatically different architecture with a patented, abstracted command and control capability layer over a commodity-based multi-mode direct chip-access architecture. The company's founders have dedicated their lives to solving the toughest IT problems on the planet, and have not lost sight of what is most important to end users: a responsible, cost-correct price point. Visit www.storbyte.com for additional information.

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