

Deploying an MLC-Based SSD in Your Data Center



All multi-level cell (MLC) flash-based solid-state drives (SSDs) are not created equal. Your first consideration should be whether the need is for enterprise- or consumer-designed drives. Advanced SSD controller technologies separate STEC enterprise-class SSDs from less reliable consumer-grade alternatives. Here are five questions to ask to ensure you are getting the benefits from a true enterprise-class MLC SSD.

1. Are you protected by a 5-year warranty?

Drive life is one of the key differences between an enterprise-class or a consumer level SSD.

To meet the demands of enterprise and data center applications, SSDs are expected to function 24/7/365, for a minimum of 5 years at full performance.

CellCare™ Technology from STEC extends the life of MLC flash-based SSDs. The longer an SSD lasts, the lower your total cost of deployment.

2. Will you get consistent performance?

MLC flash-based SSDs with CellCare™ Technology are designed for consistent read and write performance, over the entire life of the drive, which enterprise environments demand. There is potential for SSDs to slow down as the media wears down due to the increased use of error-correcting code (ECC) and retries required to overcome read issues. The more retries required, the slower the performance over the life of the drive.

CellCare Technology includes advanced signal processing algorithms to minimize flash media wear. In addition, adaptive access algorithms dynamically adjust to ensure consistent read and write performance over the life of the drive.

3. Can you expect near-zero downtime?

Shrinking flash geometries enable greater capacities and lower cost on MLC-based SSDs, but these shrinking geometries can lead to higher incidences of media errors and reduced data reliability.

STEC's Secure Array of Flash Elements™ (S.A.F.E.)

Technology delivers a near-zero failure rate. Advanced redundancy technology enables the SSD to recover from almost any flash media error scenario.

4. Will your data be there when you need it?

In critical enterprise and data center applications, you can't afford data loss due to unscheduled power outages or 'silent' data corruption in storage media. STEC enterprise-class MLC-based SSDs feature PowerSafe™ Technology, providing built-in power backup protection to ensure against power failures and internal data path protection (built-in error detection and protection) to prevent data corruption.

5. Are you getting the lowest cost per IO?

To understand the value of an SSD under data center workloads you must consider the cost per IO of your enterprise applications. This will let you determine the best deployment of MLC SSDs, single-level cell (SLC) SSDs, and/or hard disk drives.

An SSD is more than just flash memory media. Your high-value enterprise applications demand the long-term reliability, consistent performance, minimal downtime and advanced data protection of true enterprise-class SSDs. This class of product can only come from the independently verified enterprise SSD market leader. They come from STEC.

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