

STEC thrusts fat solid disk with godlike stamina

Enterprise SSD can keep it up for longer

By Chris Mellor

1st December 2011 10:17 GMT

STEC has launched a super long-life SSD capable of having 33PB written to it over a five-year period.

Flash cells wear out and so solid state drives (SSD) have a limited working life as the amount of writing activity mounts up. Multi-level cell (MLC) flash has a shorter working life than single-level cell (SLC) flash. This endurance is often expressed as the number of full capacity writes a day for a period such as five years. Another way of expressing endurance is to quote the maximum amount of data that can be written to the drive before it claps out.

Clever drive controller electronics can minimise unnecessary writes and extract usable information from cells that are starting to produce errors, which prolongs an SSD's endurance. It can also assign spare capacity to replace worn-out cells.

STEC's ZeusIOPS XE is a 300GB or 600GB capacity MLC SSD which, like the mainstream ZeusIOPS, has CellCare and SAFE technologies to manage the flash and recover from NAND page, block, die and chip failures. It can provide at least 30 full capacity writes per day, every day, for five years, which, with the 600GB model, equates to 32.85PB written.

STEC says that its new SSD is "the industry's highest endurance MLC flash-based SSD for the data centre". A quick look around the competition bears this out:

- Anobit Genesis 1 400TB: 7.3PB of lifetime writes (4TB writes/day for 5 years)
- Hitachi Ultrastar SSD400M: 7.3PB of lifetime writes.
- Micron RealSSD P300: 3.47PB of lifetime writes (1.9TB/day for 5 years)
- Seagate Pulsar 2 MLC (up to 800GB): 15PB of lifetime writes
- Seagate Pulsar XT.2 400GB SLC: 6.9PB of lifetime writes (10 full writes a day for five years)
- SMART Modular Optimus (200 - 1.6TB): 10 full writes a day for 5 years
- Toshiba MK1001GRZB (100GB): 8PB of lifetime writes (five-year lifetime)
- STEC ZeusIOPS (up to 1.6TB): 29.2PB (10 full writes per day for 5 years)
- STEC ZeusIOPS XE (300GB or 600GB): 32.85PB (30 full writes a day for 5 years)

STEC says that the ZeusIOPS XE's long endurance makes it suitable for write-intensive applications such as server-side caching, auto-tiering, metadata management and logging, and analytics. In these instances flash speed is needed but a high write rate limits the SSD's life.

The ZeusIOPS SSD is now being sampled by customers.