



# Architectural Requirements for MLC based SSDs

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# Top 3 Challenges

To adopting MLC-based SSDs in the Enterprise

**1. Endurance**

**2. Consistent Performance**

**3. Reliability**





# Enterprise Endurance

Defined as:

Writing  
the full capacity  
of the drive

10 times per day  
for 5 years

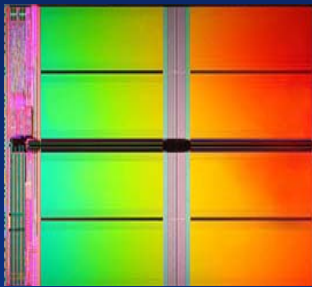
A 100GB drive = 1TB/DAY of writing





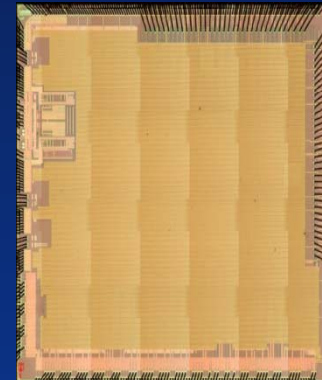
# Importance of the Controller Platform

Flash gets all the press...



but...it's static, not intelligent  
and does not interact with the  
host.

SSD is not Flash alone.



It is an intelligent system.





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# CellCare™ Technology Fills the Gap Between MLC and SLC Flash



## CellCare Technology:

- Improves endurance
  - Enterprise ready MLC flash-based SSD warranted with 10 full drive capacity writes per day for five years
- Improves performance
  - On par or better write performance compared to MLC/eMLC
  - Consistent read performance unlike standard MLC/eMLC SSDs
- Consistent Performance
  - Minimizes read performance degradation over life by preventing read retries by reducing media errors over drive life





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## Driving Reliability for MLC based Enterprise SSDs

- Data path protection
- Secure Array of Flash Elements Technology™ (S.A.F.E.)
- PowerSafe™ Technology





# S.A.F.E. Technology Improves Data Reliability

(Secure Array of Flash Elements™)



Delivers 2M hour Mean time between failures (MTBF) for MLC based SSDs

- Protects against loss of data due to bit, word line and other outlier events
- Rebuilds lost data and relocates to good sectors automatically

INSURES YOUR DATA IS ALWAYS S.A.F.E. ON AN STEC DRIVE





# Solving the Challenges of MLC Flash for Enterprise

1. Endurance

2. Consistent Performance

3. Reliability

STEC CellCare™, SAFE,  
PowerSafe Technology

Delivers a  
10x full capacity write per day for  
5 year warranty

On any MLC media





# Technology Innovation Drives Change

- Solid-state solutions here to stay
- MLC is an enabling factor in solid-state solutions
- It takes revolutionary technology to enable MLC in the enterprise





Thank you

[www.stec-inc.com](http://www.stec-inc.com)