Bye Bye! Traditional RAID Technology

Experience Faster Performance, Longer SSD Lifespan and a Robust Data Protection Mechanism with Award-Winning Technology: FlexiRemap®

accelstor

Most Innovative Flash Memory Technology

AccelStor FlexiRemap® Wins "Most Innovative Flash Memory Technology" at Flash Memory Summit 2016

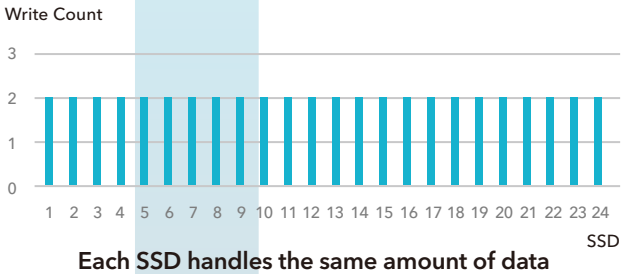
FlexiRemap® Technology

In this example, the SQL Server, Mail Server, Media Server and HPC Server write data to both all-flash devices: one supports FlexiRemap®, the other supports conventional RAID technology.

Conventional RAID Technology

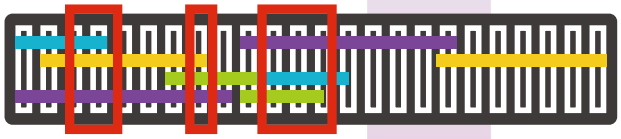
VS.

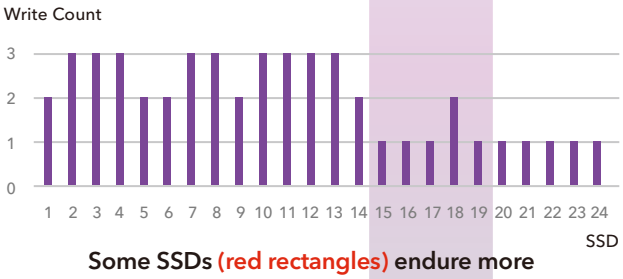
Evenly
Write to all SSDs



Each SSD handles the same amount of data

Randomly
Write to all SSDs

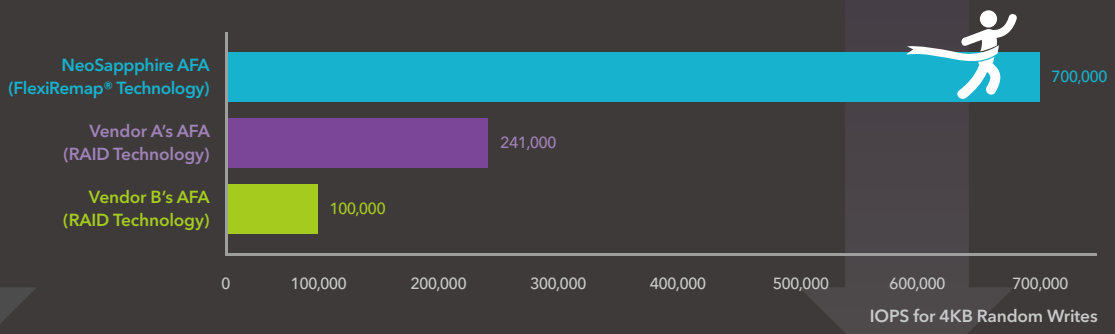




Some SSDs (red rectangles) endure more loading than others

Higher performance
- Fully utilize SSD Performance without bottlenecks

Lower performance
- Heavily loaded SSDs become a performance bottleneck



Maximize SSD lifespan
- Ensure that each SSD stores a similar amount of data and this will extend SSD endurance

Shorten SSD lifespan
- The most-used SSD will suffer a higher failure rate than other SSDs

Comparative Metrics	FlexiRemap®	RAID 5
Endurance: Total bytes written before solid-state drives get worn out (The higher the better)	> 4.8PB	< 2.8PB
System Lifespan: Sustainability under workload of 3 DWPD (The higher the better)	> 4.5 Years	< 1.7 Years

Note: Comparisons between FlexiRemap® and RAID 5, running on exactly the same 1U rack-mount platform with 8 standard 2.5" SSDs of 200GB each

accelstor

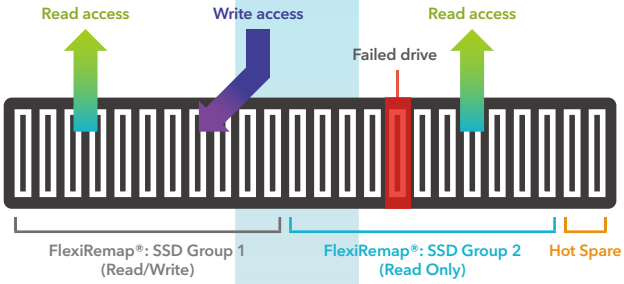
FlexiRemap®

Question: From data protection point of view, what is the difference between FlexiRemap® and traditional RAID 50/60?

Latest FlexiRemap® Technology

Robust data protection mechanism

– If one SSD fails in SSD group 2, this group will then enter read-only mode to avoid the heavy load of further writes. This decreases the chance of failure on the second drive in the same group during rebuild.



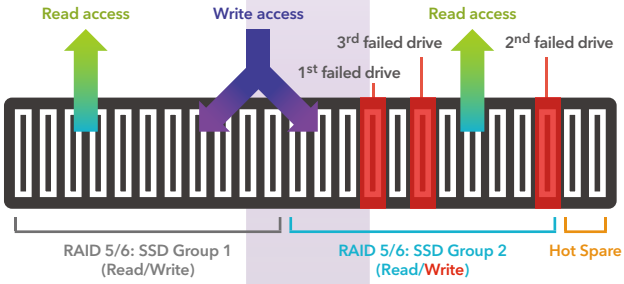
Full protection!

Thanks to FlexiRemap® with read only mode to avoid 2nd drive failure led to data loss. Your data is intelligently protected.

Conventional RAID Technology

Higher risk to cause data loss

– If one SSD fails in SSD group 2, the group still keep handling coming write data, that will increase the probability of SSD group 2 suffering a fatal failure when 2nd / 3rd drives fail before recovering all failed drives.



Keep writing? So dangerous!

Potential loss of critical data due to SSD Group 2 suffering a fatal failure. RAID 50/60 doesn't have any protection mechanism to prevent drive failures in the SSD group if a drive failure has been detected!

Question: From data protection point of view, what is the difference between FlexiRemap® and traditional RAID 50/60?

Latest FlexiRemap® Technology

Synchronous write with stunning performance

– Transfer random write to sequential write and evenly write into all SSDs.

Traditional RAID Technology

Synchronous write with low performance

- Randomly write into SSD's causing some to handle more writes than other's. Furthermore, it will lead to a performance bottleneck.

Write Protection Type	FlexiRemap® Technology	RAID 5 / RAID 50 / RAID 6 / RAID 60
Synchronous write	✔ Great performance ✔ 100% data write protection even when disaster strikes	✔ Low performance ✔ 100% data write protection even when disaster strikes
Asynchronous write	✔ Excellent performance ✔ Protect write cache by BBP (Battery Backup Power) if power outage	✔ Good performance ✔ Protect write cache by BBU (Battery Backup Unit) or supercapacitor if power outage

VP20180410

www.accelstor.com | inquiry@accelstor.com