



**Driving Innovation  
Through the Information  
Infrastructure**

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# Demystifying Solid State Storage 'Specsmanship'

Separating Fact From Fiction



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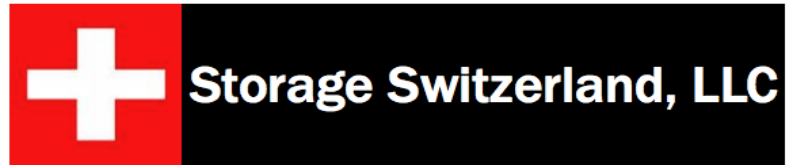
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# Agenda

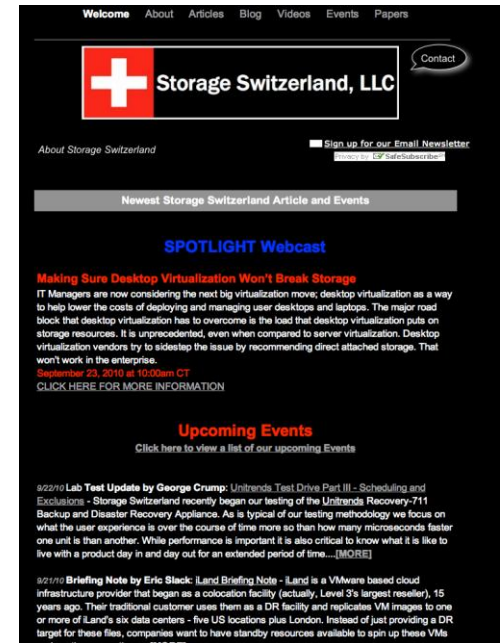
- Panel Introductions and Backgrounds
- Demystifying SSD Myths
- Demystifying SSD Terms
- Demystifying SSD Benchmarks
- What / How Should Users Test?





# Background

- Analyst firm covering the storage, cloud and virtualization markets
- Knowledge of these markets is gained through product testing, real world implementations and interactions with users and suppliers
- The results of this research is found in the articles, briefing reports, case studies and lab reports on our web site:
  - [www.storage-switzerland.com](http://www.storage-switzerland.com)





# Demystifying SSD Myths

- SSD's are not reliable enough for the enterprise
- It's Just Memory, No Moving Parts, It's All The Same
- FLASH SSD Can't Handle Heavy Write Environments
- SSD's Will Always Improve Performance



# Demystifying SSD Terms

- What is Wear Leveling?
- What is Garbage Collection?
- What is Steady State vs. Fresh Out Of Box?
- What is Write Saturation?
- What is the importance of vertical integration?



# Demystifying SSD Benchmarks

- General Things To Look Out For
  - Vendor Clarity on the test
  - Lack of complete test suite (why is something missing)
  - Random/Sequential



# Demystifying SSD Benchmarks

- What is the importance of knowing the test type?
  - Block size
  - Read/Write Mix
  - Random/Sequential





# Demystifying SSD Benchmarks

- How can good garbage collection routines be proven?
  - Performance of system under heavy write load



# Demystifying SSD Benchmarks

- How can SSD quality or endurance be proven?
  - Total Bytes Written
  - Program Erase Cycles
  - Write Amplification



# Demystifying SSD Benchmarks

- Understanding the Impact of Cache
  - Why is it there?
  - Should it be a factor in testing?
  - What is the risk associated with onboard caching?



# How Should Users Test

- How to get past Fresh Out Of Box State?
- How should caching be tested/not tested?
- How to measure reliability?



**Questions?**