What's Next After Flash?

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Several Emerging NVM Technologies

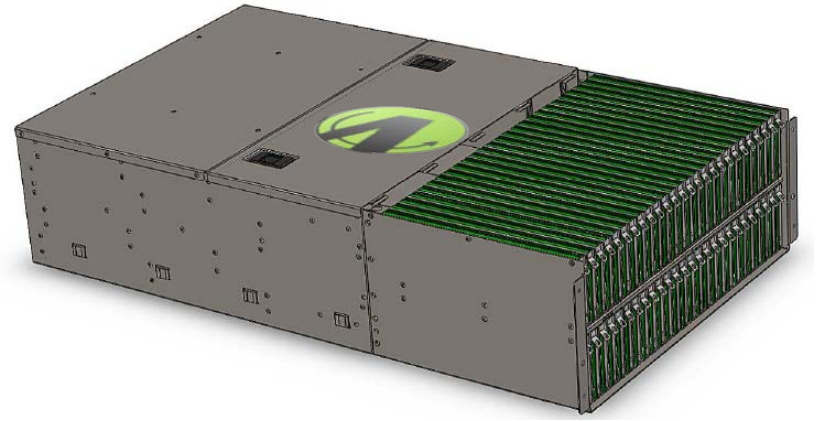
- In a balanced storage solution,
  STT-MRAM complements Flash to provide:
  - Higher Performance (IOPS)
  - Lower Latency
  - Higher Reliability
  - Lower overall cost
- STT-MRAM:
  - DRAM-like performance
    - DDR3/4 and LPDDR compatible memory interfaces
  - Practically infinite program cycles
  - Densities approaching DRAM in 2017 or later

STT-MRAM in Enterprise Storage

Value of STT-MRAM in our Enterprise Storage System

- Overcomes the write latency of Flash, achieves extremely low write latency (10's of us) for the most demanding applications
- 100% Green: no battery or supercap module like NVDIMM
- Maintains data integrity in the event of power fail
- Reduces the frequency of metadata update on the Flash
- No wear issues with improved reliability
- Increase reliability and high availability with reduced components

Balanced Approach to Performance



- Highly Available Active/Active, with no SPoF Flash Array with Integrated ***STT-MRAM***
- Up to 400TB raw in 4U.
  - Supports peta bytes of capacity with line rate, in-line data reduction
- Over 2 M IOPS, 12.5GB/s bandwidth
- Guaranteed Latency (<0.5msec)
- Fully-featured Tier0/Tier1 storage software offering
- Block Storage (FC and iSCSI) and File Storage (NFS)

A Balanced Approach (Cont.)

- Two-dimensional RAID for a high reliability solution
  - RAID 5/6 across SSDs and RAID 5 within SSD
- Line rate, in-line Data Reduction (De-Dupe and Compression) for a highly cost effective solution
- Proprietary dual port NVMe SSD design for a high density solution
- Intelligent Flash-Aware Memory Storage Software
- Fully-featured Tier0/Tier1 storage software offering:
  - Snapshot, Clones
  - Thin Provisioning
  - Synchronous and Asynchronous Replication
  - High Availability with NDU, NDE and no SPoF
  - Easy to use Multi-Array Analytics and Monitoring
  - Call home and Automated First Fault Detection