



Lightning In the Cloud

Session 301-E Thu 8/7/14 8:30 am

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Agenda

- Market Problems with Data Center Storage
- Cost Differential: SSD vs HD
- Reliability
- Future Technologies

Market Problems with Data Center Storage

- Data Reliability & Availability
- Inconsistent latency, throughput
- Federated distributed storage acting as one
- Data Efficiency

- Flash Translation layer challenges:
 - Wear leveling
 - ECC for data retention
 - Page remapping
 - Garbage collection (GC)
 - Write caching
 - Managing internal mapping tables

Cost Differential of Flash vs HDD

- TCO
- Trade Offs in reducing cost
 - Hybrid arrays
- In line technologies
 - Dedupe
 - Compression
 - Encryption



Future Memory Technologies

- Phase Change Memory
- Memristor technology