SSD Performance: Key Care Abouts

Doug Rollins

Micron Technology

DougRollins@Micron.com

Common Goals: Drive Design and Test – Answer the Questions

- **What will a given drive do for me?**
  - Application performance increase?
    - Can I really do more with the same platform? Can I do more with *less*?
    - Can I really use all the performance I can get? Can my system/users consume 15K+ write IOPs? 3GB/s in bandwidth?

  - Real power savings?
    - Maybe – Are your existing spin drives short stroked? How many enclosures are you using?

  - What else?

Common Goals: Drive Design and Test – Answer the Questions

- **How are tested drives really different from one another?**
  - Test process = deterministic (same inputs=same outputs)
  - Make relative comparisons first (drive to drive), the absolute comparisons (application performance before/after SSDs)

- **What metrics should I look at?**
  - Small block? How small?
  - Random? Sequential? Mix?
  - Match the metric to the workload
  - Latency matters – it is a function of workload

Common Assumptions: Enterprise and Client

- **Enterprise vs Client: Assumptions**

	Fill State	Access Interval	Decision Point	Downtime Accepted	Failure Consequences
Enterprise	Full	24x7	Steady State	None	Catastrophic
Client	Not full	< 8x5	FOB/Burst	Moderate	Inconvenient

- **Decision criteria = typical usage model**
  - Client => FOB region, bursty usage, mixed transfers sizes, mostly sequential
  - Enterprise Database => steady state, good small block random R/W performance
  - Enterprise Video => steady state, good large block R/W performance

Thank you!

Q&A?

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