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## **Data-Intensive Scalable Computing Laboratory (DISCL)**

### **Technical Report**

**Department of Computer Science**

**Texas Tech University**

#### **A Comprehensive Benchmark Suite for Emerging Solid State Drives**

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08/10/2011

Technical Report № TTU/DISCL-2011-02

<http://discl.cs.ttu.edu>

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# A Comprehensive Benchmark Suite for Emerging Solid State Drives

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## Abstract

Solid-state drives (SSDs) bring a fundamental change to the landscape of storage systems and are generally agreed as the replacement of hard-disk drives (HDDs) in the future. Benchmarking is used extensively to measure and compare the performance of storage systems. However, conventional benchmarks designed for spinning HDDs are neither effective for benchmarking SSDs, nor showing insights for the measurement. There is a need to design and develop benchmarks specifically for SSDs and measure the features comprehensively. Such benchmarks are useful in many scenarios, such as assisting the selection and deployment, evaluating the new design, identifying the strengths and weakness and finding the best workload, etc. We propose a Comprehensive Benchmark Suite for SSDs (CBS-SSD) to benchmark and measure the features of SSDs thoroughly. We introduce the design and discuss the preliminary results.