

## EIDETICOM NOLOAD® TRANSPARENT COMPRESSION

### On Samsung SmartSSD® CSDs powered by Xilinx FPGAs

## OVERVIEW

Eideticom's NoLoad® SmartSSD® Computational Storage Drive (CSD) integrates NoLoad Computational Storage technology with the Samsung SmartSSD CSD in a 2.5-inch (U.2) form factor. This solution provides persistent data storage and computational services.

The NoLoad SmartSSD Transparent Compression solution requires no application changes, ties directly into any File System and achieves line-rate compression while using 70% less CPU.

The NoLoad SmartSSD supports a range of Computational Accelerators for both Storage and Compute applications, namely:

- > **Storage Accelerators:** Compression, Encryption, Erasure Coding, Deduplication
- > **Compute Accelerators:** Data Analytics & Video Codecs

The NoLoad SmartSSD Transparent Compression solution leverages the NoLoad software framework that was developed to allow applications such as Databases (Hadoop, RocksDB, Cassandra and MySQL) to offload critical storage tasks. This offloading leads to improved performance, efficiency, and reduced costs for the storage system.

NoLoad's NVMe compliant interface provides seamless integration and has been validated on Intel, AMD, ARM and IBM Power CPUs.



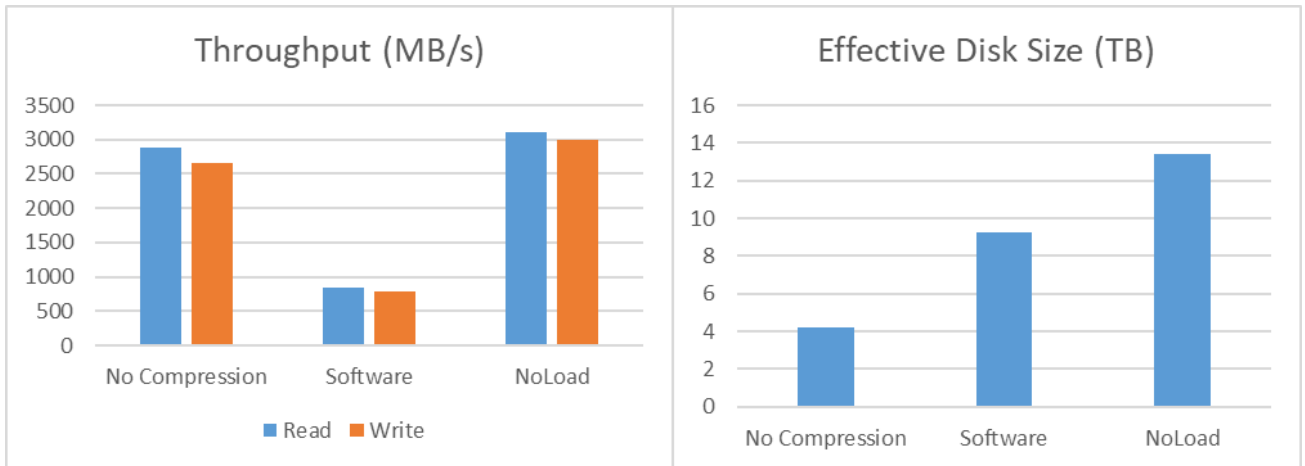
## BENEFITS

- > Up to 10x more Storage Capacity
- > Works with Every Application
- > Line-Rate Compression Performance

## CAPABILITIES

- > Single-port, PCIe Gen3x4
- > 2.5-inch (U.2) form factor
- > 4 TB raw storage capacity, up to 24 TB storage capacity with compression
- > NVMe 1.3 compliant (validated by UNH) including CMB support
- > NVMe MI

## END SOLUTIONS - TRANSPARENT COMPRESSION



**Bottomline: The NoLoad SmartSSD provides significant Storage Capacity advantages (lower \$/TB) and CPU utilization, while also achieving better than Line-Rate Throughput<sup>1</sup>**

### COST-BENEFIT ANALYSIS

- > **Storage Capacity Costs:** NoLoad Compression reduces the effective \$/TB of the system by increasing the amount of data that can be stored on the NoLoad SmartSSD.
- > **Storage Lifetime Costs:** NoLoad's higher Compression Ratio (CR) extends the lifetime of the NoLoad SmartSSD, since for a given compression input throughput it reduces the Drive Writes Per Day (DWPD).
- > **Throughput Performance Costs:** NoLoad compression is 3-6 more CPU efficient than lz4-1 and over 100 times more CPU efficient than gzip-9. This enables a compression to be enabled even for high performance applications.
- > **NoLoad Transparent Compression:** Zero application changes and transparent to applications with no userspace modifications required. Ties directly into existing production filesystems with the ability to layer on more computation over time i.e. encryption, analytics, etc

### TAKE THE NEXT STEP

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<sup>1</sup> Example above is for a Hadoop TeraGen dataset