



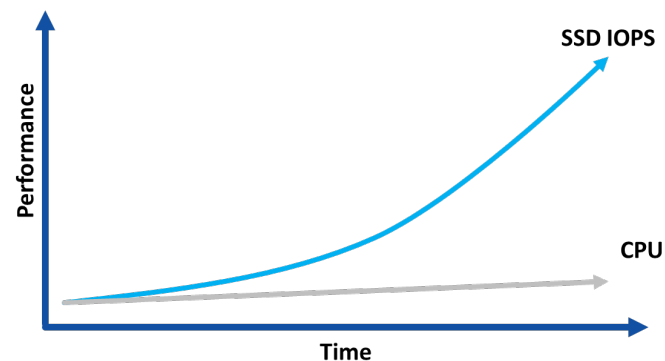
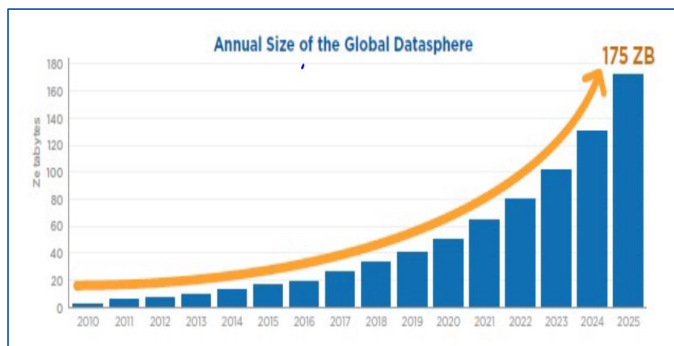
Accelerate Everything

NVMe Computational Storage

Stephen Bates, CTO, Eideticom



The Data-Compute Bottleneck



Exploding Storage Demands & Increasing Storage IO Performance

Unprecedented data growth driven by IoT, 5G, AI/ML, etc
SSD IO rates dramatically increasing

Moore's Law dramatically slowing

CPU processor core performance now
forecasted to double every 20 years

Eideticom's NoLoad[®]

Purpose built for acceleration of storage and compute-intensive workloads

1) NoLoad Software Stack

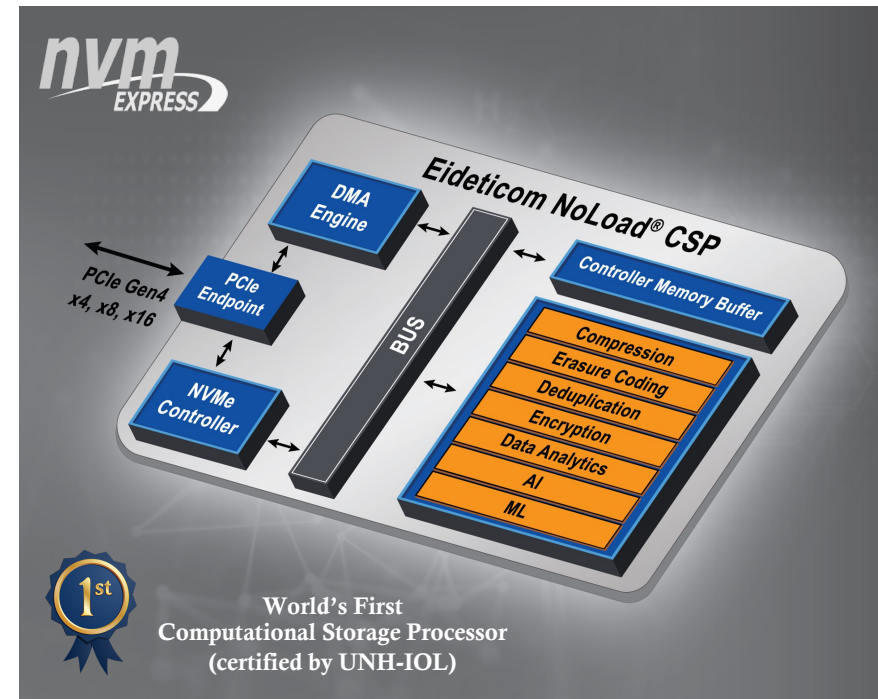
- End-to-end computational storage solution providing transparent computational offload
- Complete Software and IP core stack

2) NoLoad NVMe Front End

- NVMe compliant, standards-based interface
- High performance interface tuned for computation

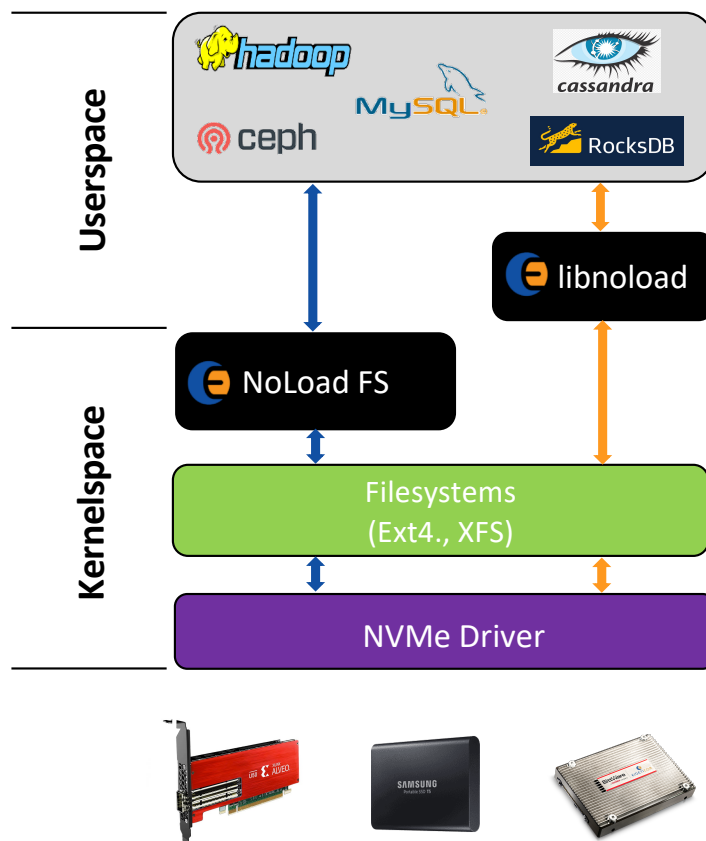
3) NoLoad Computational Accelerators

- **Storage Accelerators:** Compression, Encryption, Erasure Coding, Deduplication
- **Compute Accelerators:** Data Analytics, AI and ML





NoLoad® Software Stack: Transparent Computation



libnload: Userspace

- Zero Operating System changes

OR

NoLoad FS: Kernel space

- Zero Application changes
- Ties directly into existing production filesystems
- Transparent to applications with no userspace modifications



Customer Success - LANL



“The Eideticom NoLoad devices have demonstrated that we can offload storage functions onto accelerators enabling line-rate compression, improving CPU utilization, and reducing memory bandwidth pressure.”

Brad Settlemyer, Senior Scientist, Los Alamos National Laboratory

Recent Press:

- [LANL Eideticom PR](#)
- [The NEXT Platform Review](#)

“Eideticom’s NoLoad provides hardware-based compression that enables increased storage capacity (lower \$/TB) without sacrificing performance”



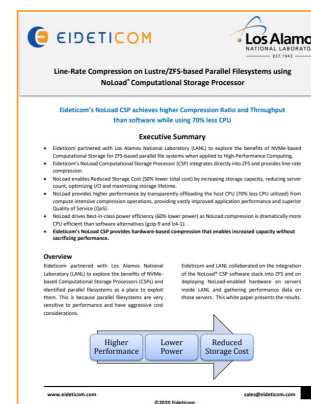
Reduced Cost



Higher Performance



Lower Power





We are driving NVMe standardization

- **What** - Amazon Web Services (AWS) and Intel announced their intent to standardize NVMe-based computation (NVMe 4091)
- **Why** - AWS want to see an eco-system of NVMe devices that can run computation on them
- **When** - Standard in 2022. Pre-standard products now
- **Benefits:**
 - 1) A roadmap for an ecosystem
 - 2) Collaboration on open-source software
 - 3) Multi-vendor interoperability



NVMe Computational Storage Task Group

Co-Chairs

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