Accelerate Everything

EDSFF for NVMe Computational Storage Processors
Flash Memory Summit 2019
NoLoad® NVMe-based Computational Storage Processor

Best-In-Class Storage and Analytic Acceleration delivered via an NVMe-based Computational Storage Processor.
NoLoad® CSP – Hardware Platforms

NoLoad® CSP U.2
- Standard U.2 NVMe form-factor: Utilizing SFF-8639 connector
- BittWare 250-U2

NoLoad® CSP Alveo
- Standard GPU form-factor: x16 PCIe
- Deployed on Xilinx Alveo U200, 250 or U280

Available Now

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NoLoad® CSP – Transforming Data Center Acceleration

Ecosystem

Applications

NoLoad® Computational Storage Processor (CSP)

Devices

Boards
NoLoad® CSP - Software

- **Management**: nvme-cli, nvme-of, etc
- **Applications**: libnoload
- **User space**: SPDK
- **OS**:
  - Both kernel and User space frameworks supported
  - No changes to OS
  - Use In-box NVMe drivers
- **Hardware**: NoLoad® CSP & Hardware Evaluation Kits
New Form-Factor(s) for NoLoad®

Form-Factor Requirements

- Physically large enough to fit interesting processors (including FPGAs). This makes M.2 unviable.
- Good power and thermal envelope (ideally 15W-40W).
- PCIe 4.0 and 5.0 for NVM Express interface.
- E1.S is a great choice!

2019: Industry Form Factor – Power/Thermal Landscape

2019 Form Factor Conclusion
- E1.S 25W Asymmetrical Case Significantly Improves LFM
- Promising for:
  - Storage Devices
  - Front and Rear of compute box placement
  - Generic PCI Devices
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**NoLoad® CSP E1.S EDSFF**
- Standard E1.S NVMe form-factor
- BittWare 250-E1.S Hardware
New Form-Factor(s) for NoLoad®

Eideticom NoLoad CSP on 250-E1S EDSFF
Enterprise-class Computational Storage Processor

Eideticom’s NoLoad®, preconfigured on BittWare’s 250-E1S, is a Computational Storage Processor (CSP) conforming to the EDSFF-7th-100K/EDSF specification. This energy-efficient, flexible compute node is intended to be deployed within EDSFF NVMe storage platforms delivering accelerated initiatives of:
- Encrypt/Decrypt/Deduplication
- Compression, Encryption, and Hashing
- Storage/Network/search and Database Sorts/Filter
- Machine Learning/inference

The 250-E1S is front-serviceable in a 1U chassis and can be mixed in with storage units in the same server, allowing users to mix and match storage and acceleration.

key features
- Ideal for NVMe EDSFF storage servers and arrays
- Peer-to-Peer CPU memory bypass
- Composability via NVMe-oF

Come see it in Eideticom booth (#XXX) and Molex booth (#XXX)!!
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