

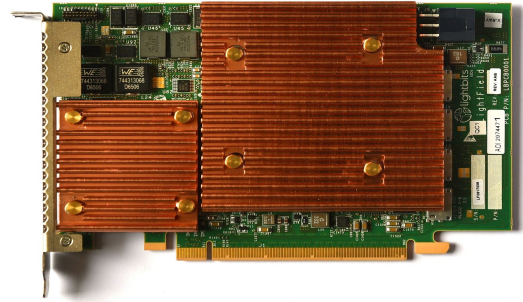
LightField™ Acceleration for LightOS®

Lightbits Labs™ storage solutions offer a revolution in disaggregated flash platforms for cloud and data center infrastructures with a software-only or software with hardware acceleration solution.

[LightOS](#) is Lightbits Labs software-defined storage solution.

The LightField card is a PCIe storage acceleration option that seamlessly integrates with LightOS enabled systems. The card speeds LightOS's NVMe/TCP target and Global Flash Translation Layer (GFTL) with efficient hardware-based accelerated functions to improve overall system throughput, SSD utilization, and endurance that maximizes performance and extends LightOS TCO savings.

LightField enabled systems experience improved utilization enabled by hardware based at wire-speed data compaction and reduction. LightField is designed to run at the network's full line rate so that it truly adds value and doesn't result in performance degradation.



LightOS Key Features and Benefits

Compatible with LightOS

- Seamless integration with LightOS enabled systems
- No need to deploy or qualify a different LightOS build
- Can be optionally enabled or disabled post-deployment depending on application needs

High-Performance Storage Services

- Line rate 200 Gbps throughput, adds value with no performance penalties
- Line rate compression and decompression an improve utilization by >3x
- Data compaction improves utilization and reduces SSD write cycles
- Hardware DMA acceleration for peer-to-peer data shuffling between SSD's

Data Protection Services

- Elastic Erasure Coding (EC) and wire speed parity engine
- SSD Garbage Collection management
- Hardware SGL's for zero-copy network-to-storage data transfers accelerating NVMe/TCP

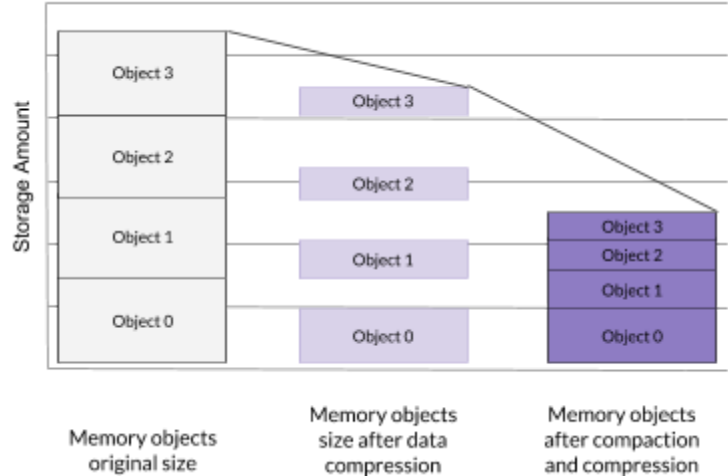
FPGA Based Extensible Platform

- Future proof, features can be extended to enable new features
- In storage processing capable architecture for near storage compute

Data Compression and Compaction

Each LightField accelerator card can simultaneously perform compression of 100Gbps and decompression of 100Gbps, without affecting write/read throughput or latency.

- Data compaction increases the effective user capacity, SSD endurance, and overall system performance
- Compression data service can be configured (enabled) on a per name-space basis
- Data compression improves system provisioning, reduces SSD Write Amplification and ultimately SSD endurance
- Compaction benefits also extend to application metadata even if stored user data is already compressed



Available Now

For more detailed datasheet and roadmap, contact us at info@lightbitslabs.com

Product Name	LightField 1.0 Accelerator
Form Factor	PCIe Gen 3.0 x16 AIC, FHHL
Availability	Production

About Lightbits Labs™

The Lightbits LightOS storage solution is the latest innovation from the Lightbits team, who were key contributors to the NVMe standard and among the originators of NVMe over Fabrics (NVMe-oF). The Lightbits LightOS storage solution uses NVMe/TCP to separate storage and compute without touching the network infrastructure or data center clients. The transition is so smooth your applications teams won't even notice the change. Once they switch to the LightOS storage solution, they can scale storage and compute independently and with a consistently better user-experience. Finally, you can separate storage from compute without drama.

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