

Lightbits Cloud Data Platform on Supermicro SuperServers

Lightbits' software-defined, disaggregated and high-performance storage can be deployed on Supermicro SuperServers over standard ethernet networks using TCP/IP protocol, requiring zero modification to applications.

While software-defined storage is desirable for its ability to lower cost by utilizing standard servers and components, a "do it yourself" approach is not for everyone.

For the ultimate in scalability, performance and convenience, this ready-to-deploy solution delivers composable NVMe® over TCP-based block storage with built-in Intelligent Flash Management™ that increases flash endurance by 20X. It's an ideal platform for applications running on-premises, in private and edge clouds in containerized or virtual environments.

DEPLOYING WITH CONFIDENCE

Lightbits offers rich data services such as thin provisioning and compression. A single SuperServer in a Lightbits cluster with redundancy enabled can serve up to 4.7 million random 4K read IOPs, up to 760,000 random 4K write IOPs, up to 21GB/s of read bandwidth and up to 4.3GB/s of write bandwidth.

LIGHTBITS ON A SUPERMICRO SUPERSERVER

Unmodified Software on Clients

- Standard NVMeoF 1.1 w/multipathing (ANA)
- Clients can connect to multiple clusters

Clustered/Failover Storage Solution

- Distributed cluster management with fast failover and no single point of failure
- Cluster size: 3-16 servers
- 64K Volumes per cluster

Lightbits Cluster Performance

- 75 Million 4K Random Read IOPs
- 12 Million 4K Random Write IOPs
- 336 GB/s Read Bandwidth
- 68 GB/s Write Bandwidth

Lightbits Cluster Capacity (15.36TB drives)

- 4.68PB Effective Capacity (2x replication, Elastic RAID, 2:1 compression)

Lightbits Cluster Latency with 2x Replication

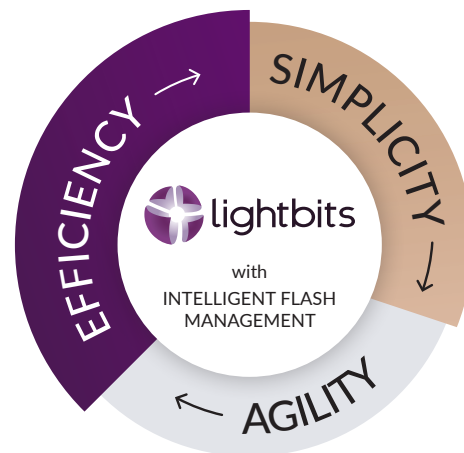
- 160µs average latency 4K Random Read @1.27M IOPs per server
- 493µs average latency 4K Random Write @433K IOPs per server

Storage Services

- QoS
- Thin provisioning
- Compression
- Elastic RAID for drive failure protection
- Volume replication (1x, 2x or 3x) per volume

Node Management

- Replication and failover handling
- Failure handling using NVMe/TCP multipath
- Non-disruptive cluster upgrades (for 2x and 3x replicated volumes)



Lightbits cloud data platform with Intelligent Flash Management enables efficiency, simplicity and agility for the modern datacenter.



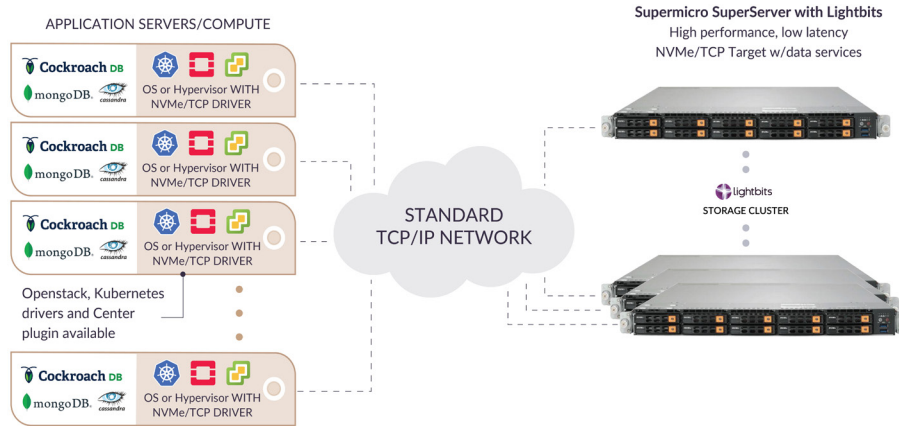
Application Environment Support

- VMware support
- Kubernetes via CSI
- Openstack via Cinder
- Bare Metal

Management

- RESTful API
- CLI support for scripts and monitoring
- Prometheus Metrics and Alerts
- Pre-configured Grafana dashboards

SUPERSERVER LIGHTBITS CLUSTER TOPOLOGY

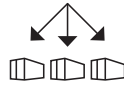


Cloud Native Database deployment utilizing a Supermicro SuperServer with Lightbits NVMe/TCP storage targets

SUPERMICRO AND LIGHTBITS BENEFITS



Composable:
Simple Scaling and
Deployments



Fast Application
Deployment and
Load Balancing



Improved
Utilization
and TCO

SUPERMICRO AND LIGHTBITS APPLICATIONS



Visual Effects
and Video
Processing



Latency and
Performance Sensitive
Databases



Latency Sensitive
High Transaction
Workloads



Cloud
Services IaaS,
PaaS, SaaS

| CONFIGURATION | PERFORMANCE | PERFORMANCE AND CAPACITY | CAPACITY | BASIC | DENSITY | BASIC |
|--------------------|--|--|---|---|--|--|
| Server SKU | SYS-220U-TNR | SYS-220U-TNR | SYS-220U-TNR | SYS-220U-TNR | SYS-220BT-DNTR | SSG-110P-NTR10 |
| Form Factor | 2U1N | 2U1N | 2U1N | 2U1N | 2U2N | 1U1N |
| Node Raw Capacity | 153TB | 307.20TB | 307.20TB | 153TB | 368TB | 61.44TB |
| Effective Capacity | Up to 800TB | Up to 800TB | Up to 800TB | Up to 393TB | Up to 786TB | Up to 188TB |
| CPU | 2x ICX 6338 | 2x ICX 6336Y | 2x ICX 6336Y | 2x ICX 6336Y | 4x ICX 6336Y | 1x 6314U |
| Memory | 16x 16GB | 16x 16GB | 16x 16GB | 8x 16GB | 16x 16GB | 4x 32GB |
| PMEM | 16x 128GB | 16x 128GB | 16x 128GB | 8x 128GB | 16x 128GB | 4x 128GB |
| NVMe Drives | 20x 7.68TB | 20x 15.36TB | 20x 15.36TB | 20x 7.68TB | 24x 15.36TB | 8x 7.68TB |
| Networking | 2x 2p 100GbE | 2x 2p 100GbE | 1x 2p 100GbE | 1x 2p 100GbE | 2x 2p 100GbE | 1x 2p 100GbE |
| Lightbits License | 1x SFT-LB-LBS210X | 1x SFT-LB-LBS210X | 1x SFT-LB-LBS210X | 1x SFT-LB-LBOS210X | 2x SFT-LB-LBOS210X | 1x SFT-LB-LBOS210X |
| IOPS* | [Read 100%: 4430K] [Write 100%: 700K] [Read-Write 70-30%: 1540K] [Read-Write 50-50%: 1100K] | [Read 100%: 4070K] [Write 100%: 650K] [Read-Write 70-30%: 1450K] [Read-Write 50-50%: 1000K] | [Read 100%: 2600K] [Write 100%: 500K] [Read-Write 70-30%: 1140K] [Read-Write 50-50%: 860K] | [Read 100%: 2400K] [Write 100%: 450K] [Read-Write 70-30%: 1000K] [Read-Write 50-50%: 800K] | [Read 100%: 4800K] [Write 100%: 900K] [Read-Write 70-30%: 2000K] [Read-Write 50-50%: 1600K] | [Read 100%: 1120K] [Write 100%: 240K] [Read-Write 70-30%: 520K] [Read-Write 50-50%: 380K] |

X - 1, 3, OR 5 (1 year, 3 years, 5 years)

To learn more, please visit our website, www.lightbitlabs.com To contact our team, email us at info@lightbitlabs.com

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