



# Data Sheet

## AmpliStor Storage System

Amplidata's **AmpliStor Object-based Software Defined Storage** system provides a complete data storage solution for Exabyte-scale, Big Data. The system is built on a scalable architecture that can grow performance and capacity dynamically, while providing the highest-levels of data durability, with the best storage efficiency, high-performance and the lowest Total Cost of Ownership. The system employs patent-pending BitSpread and BitDynamics software to enable the following key values:

### Massive Scale for BIG DATA

- Scalable to Exabytes of data & Billions of objects
- Throughput scales with amount of resources

### Fifteen 9's Storage Durability and Beyond

- Tunable N-level fault tolerance via policies
- Eliminates the lengthy rebuilds of RAID on high-density disk drives
- Eliminates data corruption or loss due to bit errors

### Super-Efficient

- 70% reduction in storage footprint compared to "Three copies in the cloud"
- 50% reduction in storage versus mirrored RAID
- 50-70% lower floor space & power consumption

### Automated Management

- Self-healing design manages data integrity assurance and auto-repairs data

### 50%-70% Reductions in TCO

- Reduced storage footprint (CapEx)
- Reduced operation expenses in power, datacenter space & management costs

### Optimized for Intel® Xeon® processors

- AmpliStor algorithms are optimized to get the most from the latest Intel® processors



## AMPLISTOR SCALE-OUT ARCHITECTURE

AmpliStor is built on a scale-out two-tier architecture. The storage pool is comprised of high-density, low-power AmpliStor Storage Nodes, and the front-end scales-out from a minimum of 3 high-performance AmpliStor Controller Nodes. The system integrates a fully redundant 10 Gb and 1 Gb Ethernet fabric to connect the AmpliStor Controllers and Storage Nodes together as a single pool. Capacity can be increased dynamically through additional storage nodes, and IO throughput can be scaled with additional Controller Nodes. Customer network access to the system is over 10 Gb Ethernet ports to each Controller serving http/REST, which hosts the patent-pending BitSpread distributed encoder. Storage Nodes embed BitDynamics maintenance agents for data integrity verification, management, monitoring & self-healing.

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**AMPLIDATA**  
1551 McCarthy Blvd., Suite 204  
Milpitas, CA 95035 (USA)

**INFO**  
info@amplidata.com  
www.amplidata.com

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## AmpliStor AS36 & AS48 Storage Nodes



### Storage Interfaces

AmpliStor REST, S3 object storage API  
 Python Command Line Interface (CLI)  
 .Net SDK and C language API  
 WebDAV 1  
 NFS, CIFS, iSCSI via partner Gateways

### Management

BitSpread® object encoder with dynamic policy-based storage durability and N-level fault tolerance  
 BitDynamics® hardware monitoring & self-healing with parallel rebuilds  
 Active data integrity verification & assurance via granular CRC checksums  
 Web Management Console (GUI)  
 SNMP Alerts, Traps, MIB  
 Integrated and automated capacity management  
 Out-of-band health monitoring & self-healing after component failures  
 Plug-and-play auto-discovery and configuration of new nodes  
 Fast & automated installation & boot

### Rack Specifications

44U  
 2 x 48 port Ethernet Switches  
 2 x 48 1 GbE ports + 4 10GbE SFP+ switches  
 3 Controllers & 39 Storage Nodes with 3 GB/sec aggregate throughput  
 Up to 468 drives at 1.872TB RAW  
 4.2 KW (nominal) / 6.6 KW (peak)  
 2 x 30A / 240VAC PDU power supplies  
 1 EIAU High – 19" IEC rack-compliant server

### AS36 / AS48 Storage Node Specifications

Low-power Intel® Xeon® Processor E3-1220L v2 (17 Watts)  
 12 x 3TB (AS36 - 36TB) or 12x 4TB (AS48 - 48TB) WD\* "Cloud" SATA drives  
 8GB Memory  
 2 x 1GbE network interfaces  
 33.5" depth x 1.75" height x 19" width  
 57 lbs. (fully populated chassis)  
 100 to 240 VAC, 50 - 60Hz, 3.0A – 1.5A  
 10° C to 35° C (50° F to 95° F) < 2100m (<7000') elevation, 20% to 80% relative humidity, non-condensing  
 CE & UL\* Listed, RoHS  
 1 EIAU High – 19" IEC rack-compliant server

### AC8 Controller Node Specifications

Dual Intel® Xeon® processors E5-2650 (20M Cache, 2.00 GHz, 8.00 GT/s Intel® QPI)  
 Supermicro\* X9DRW-3F Dual Socket R (LGA 2011) Motherboard  
 Intel® C606 Chipset  
 2 x Gigabit Ethernet  
 Intel® i350 4 x 10GbE, Intel® 82599ES via (2) AOC-STGN-i2S add-on cards  
 1x Gigabit Ethernet, Realtek\* RTL8211E PHY (dedicated IPMI)  
 IPMI 2.0 w/Virtual Media/KVM over LAN  
 1U Supermicro\* 116TQ-R700WB Chassis – Black  
 10 x 2.5IN Hot-swap SAS/SATA Drive Bays  
 2 x PCI-E Expansion Slots: (2) x16 Full-height 700W (Both occupied)  
 Redundant AC Power Supply (80 Plus Gold Certified)  
 Dimensions: 1U (H) x 19IN (W) x 23.5IN (D)  
 8 x 8GB PC3-12800 DDR3 ECC Registered 1600MHz Memory (64GB)  
 2 x 1TB Seagate\* Constellation\* 2 2.5IN SATA-III 6Gb/s HDD  
**Options:** 1 to 6 x 240GB Intel® 520 SSD 2.5IN SATA-III 6Gb/s HDD

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### AMPLIDATA

1551 McCarthy Blvd., Suite 204  
 Milpitas, CA 95035 (USA)

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info@amplidata.com  
 www.amplidata.com

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