



# HGST Active Archive System

The HGST Active Archive System is a highly scalable object store that allows you to scale-up from 672TB<sup>1</sup> (raw) and scale-out to over 35PB (raw) to help keep up with your data growth and deliver your business objectives. For data that requires long-term retention with easy and fast retrieval, the Active Archive System provides outstanding levels of simplicity, scalability, resiliency, and affordability.



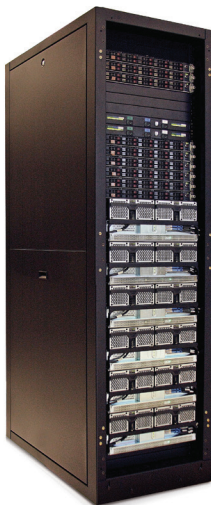
## Highlights

- **Simple to Deploy** – Power and network connections are all that is needed
- **Extreme Scale** – Increase capacity and performance in line with data growth
- **Highest Resiliency** – up to 15 nines of data durability, with the ability to survive a data center outage when utilized in a 3-site geo-spread configuration
- **Enterprise Security** – end-to-end encryption for data-at-rest or in-flight for sensitive application data
- **Excellent TCO** – Low acquisition cost, power/TB, and low operating costs



## Use Cases

- **Cloud Service Providers**
  - Backup as a Service
  - Storage as a Service
- **Media and Entertainment**
  - Production Media Archive
  - On-premises S3 Media Target
- **Life Sciences and Health Care**
  - Genome data banks
  - Medical imaging
- **Backup and Archive target**
- **Analytics storage tier**
  - Big Data repository



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## Simple to Install and Use

The HGST Active Archive System addresses the challenges of architecting, purchasing and operating white-box cloud storage solutions by delivering a fully integrated rack-level system that can be up and running in minutes. Each system is vertically integrated with software, networking, and control nodes. Simply roll into place, connect the power, and configure the network connections. Within minutes, the system is online, presenting an Amazon S3™-compliant object interface that can easily integrate with existing S3-aware applications. Leading ecosystem partners provide solution offerings for customers with media asset management, backup, archiving, or for NFS/SMB/CIFS connectivity requirements. Now businesses can focus their resources on growing revenue instead of managing the infrastructure.

## Extreme Scalability

The system is based on a fully integrated modular architecture that starts with terabytes (TB) of raw storage and can incrementally scale-up to petabytes in a single rack. Start with the base storage capacity configuration, and as storage requirements grow, simply add expansion scale-up modules to increase the available capacity. Each fully populated rack delivers up to 3.5GB per second throughput to the clients and the aggregate available performance scales with additional racks. IT staff no longer buys ahead of consumption or suffers through the problem of forklift upgrades to add more available capacity.

## Highest Availability with Unbreakable Durability

Unparalleled data availability and data integrity are essential ingredients for a world-class cloud infrastructure. Users can utilize the HGST Active Archive Systems in a 3-site configuration to geographically disperse data for ultimate availability. When a 3-site configuration is employed, the system delivers true enterprise-class data durability. Even with an entire data center outage, a 3-site configuration delivers continuous availability of customer data. To achieve this highest grade durability, the system incorporates patented BitSpread® technology, a rateless erasure code alternative to RAID and traditional Reed-Solomon erasure codes that sets a new resiliency and performance standard. The outstanding durability is complemented with a maximum capacity of over 35PB of raw capacity dispersed across three data center locations. Finally, with the Active Archive System's strong consistency, you don't have to worry about stale data impacting your business decisions.

## Compelling Total Cost of Ownership

With the HGST Active Archive System, businesses and IT organizations no longer have to weigh the risks of a public cloud unplanned expense for downloads against the cost to build an internal private cloud. Through vertical integration and innovation, HGST delivers a system that rivals the scale of traditional cloud infrastructure, at less than a DIY cost for significant CAPEX savings. In addition, because the system is already integrated and tested, you don't have to use valuable resources to configure and support a unique architecture. Utilizing patented helium-filled hard drives, power cost per usable terabyte for the system is 88% lower\* and requires significantly less cooling over white-box alternatives providing for a lower OPEX. The breakthrough cost, simplicity of installation and commissioning allows your IT resources to be directed to activities that generate value for the business.

\* Lower cost is based on relevant market prices of white-box ODM platforms, and assumes a 4 year lifetime power of a usable TB utilizing commercial Swift distribution.



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## Information & Technical Specifications

Product Specifications	Base Rack	Full Rack	Base Rack	Full Rack
Model #	SA1000	SA7000	SA1010	SA7010
<b>Capacity<sup>1</sup></b>				
Rack capacity (raw/usable)	672TB / 417TB	4.7PB / 2.9PB	840TB / 521TB	5.9PB / 3.6PB
3-Geo configuration (6 racks, raw/usable)	4.03PB / 1.9PB	28.2PB / 13.5PB	5.04PB / 2.4PB	35.4PB / 16.9PB
Maximum object size	16TB			
Maximum number of objects	1.8B objects			
<b>Expansion Options<sup>2</sup></b>				
Scale-Up Module capacity (raw/usable)	672TB / 417TB	N/A	840TB / 521TB	N/A
<b>Performance</b>				
Client throughput performance	Up to 3.5GB/s (depending on configuration)			
<b>Reliability</b>				
Data integrity	Tolerates 1000 bit errors per object			
Data durability	Starts at 11 nines (99.999999999%)	15 nines (99.999999999999%)	Starts at 11 nines (99.999999999%)	15 nines (99.999999999999%)
Availability (hrs/day x days/wk)	24x7			
SW/FW upgrades	Rolling upgrades			
<b>Connectivity</b>				
Protocols	RESTful S3 (NFS/SMB via gateway)			
Client connectivity	60Gb/s per rack (6x10Gb/s)			
<b>Physical size</b>				
Rack size height x width x depth mm (in)	2041 x 600 x 1100mm (82.2 x 23.62 x 40.35in)			
Weight kg (lbs)	503kg / 1109lbs	1060kg / 2338lbs	503kg / 1109lbs	1060kg / 2338lbs
<b>Power</b>				
Power supply	Redundant intelligent PDUs			
Power consumption (typical, W)	2700	6700	2700	6700
Power consumption (typical, KVA)	2.7	6.98	2.7	6.98
Power characteristics	200-240VAC, 30A, 3 phase 50/60Hz			
<b>Environmental<sup>3</sup></b>				
Cooling	Redundant high efficiency fans			
Temperature range	20° to 35°C de-rated 2% per 1000 feet altitude increase			
Humidity	8% to 90% (non-condensing)			
Compliance	FCC/ICES-003, CE, VCCI, CISPR 22, CISPR 24, KN22, KN24, EN60950-1 2nd edition, UL60950-1 2nd edition			
Carbon footprint (max)	0.0062 Metric Tons of CO <sub>2</sub>			
BTUs/hr (max)	10,134	25,147	9,215	22,867

<sup>1</sup> One MB is equal to one million bytes, one GB is equal to one billion bytes, one TB equals 1,000GB (one trillion bytes) and one PB equals 1,000TB when referring to storage capacity.

Usable capacity will vary from the raw capacity due to object storage methodologies and other factors.

<sup>2</sup> UA1000 upgrades can be purchased in increments of 672TB to a maximum capacity of 4.7PB in the rack. UA1010 upgrades can be purchased in increments of 840TB to a maximum capacity of 5.8PB in the rack.

<sup>3</sup> Unless otherwise noted, environmental data shown is for the full configuration only.

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