ActiveScale™ P100 System

HGST
a Western Digital brand



ActiveScale
P100 System

Highlights

- **Easy to Deploy:** Rack space, power and network connections are all that is needed
- **Easy to Scale:** Increase capacity with both scale-up and scale-out configurations
- **Extreme Data Durability:** Data protection with BitDynamics, BitSpread, versioning, and advanced erasure coding
- **System Availability:** Geo-spread or asynchronous replication to protect data
- **Excellent TCO:** Low acquisition cost, power/TB, and operating costs
- **Management:** ActiveScale SM & CM manage your entire namespace for efficient petabyte-scale storage management

Applications/Environments

Media & Entertainment
- Production Media Archive
- On-premises S3 Media Target

Life Sciences and Health Care
- Genome data banks
- Bioimaging

Backup and Archive
- Tape consolidation
- Active data repository

Analytic Storage Tier
- Data lake repository

Cloud Service Providers
- Backup as a Service
- Storage as a Service

The ActiveScale™ P100 is a modular object storage system that allows you to scale out or geo-spread to 18PB, so you can easily keep up with data growth, storage management needs and deliver on business objectives. For large-scale data that requires long-term retention with easy and fast retrieval, the ActiveScale P100 is designed to facilitate a "Data Forever" architecture for investment protection and ease of operation.

Simple to Install and Use

For large-scale data, the ActiveScale P100 presents an Amazon S3™-compliant object interface that can easily integrate with existing S3-aware applications. Real-time system management is provided by ActiveScale SM which manages your entire namespace, not just one rack, and combined with ActiveScale CM cloud-based analytics which provides historical and predictive capabilities to better monitor large-scale storage efficiently and effectively.

Simple Scalability

The ActiveScale P100 is based on a modular storage node architecture that starts with 720 terabytes (TB) of raw storage and scales up in increments of 720TB to over 2PB. Additionally, the system can scale out or geo-spread to over 18PB now with 3 geo scale out. Each system delivers up to 8GB/sec throughput for high productivity. Grow your system without re-balancing and avoid forklift upgrades with dynamic data placement. IT staff can easily add capacity and performance to keep up with high data growth rates, and manage it with ease.

Outstanding Availability and Durability

Advanced data availability and integrity are essential for a world-class cloud infrastructure. The ActiveScale P100 can be deployed in a 3-site configuration to geographically disperse data for extreme availability. Even with a data center outage, the 3-site configuration delivers continuous data availability for uninterrupted operations. Data durability comes from patented **BitSpread**® technology. In addition, **BitDynamics**™ provides high data integrity using background verification and assurance. Facilitating Data Forever can take advantage of object versioning to control how objects are managed over their lifetime. Finally, system availability can be enhanced by 3-site configurations with ActiveScale's strong consistency, in contrast with eventual consistency found in many other object storage systems, you don't have to worry about stale data impacting business decisions. Where 3-site configurations are not appropriate, 2-site asynchronous replication is also available as an eventual consistency option.

Changing the Economics of Storage

Through vertical integration and innovation, ActiveScale P100 delivers large-scale capacity and growth at less than a DIY cost for significant CAPEX savings. Utilizing our patented helium-filled hard drives, ActiveScale benefits from low power and significantly less cooling than traditional drives, providing a lower OPEX. Value is more than low TCO, you can increase the value of your data by utilizing the portfolio of solution partners available for ActiveScale.

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Specifications

	Base Configuration	Scale-Up Module	Standard Instance Base + 3 scale-up modules
Capacity[1]			
Configuration capacity (raw/usable)	720/480-508TB	720/480-508TB	2.16/1.44-1.52PB
Maximum multi-part object size		50TB	
Maximum number of objects	0.6B	0.6B	16.2B
Maximum Namespace capacity (raw/usable)		18.9/12.6-13.5	
Software			
Operating system software		ActiveScale OS 5.x	
Management interfaces		Real-time System Management Console, CLI, RESTful API	
System analytics		ActiveScale CM, a cloud-based storage analytics service	
Security		Data encryption in flight SSL/TLS using AES-256, Data encryption at rest (AES-256)	
Data protection		BitSpread: Advanced Erasure Coding and Dynamic Data Placement	
SW/FW upgrades		Nondisruptive rolling upgrades	
Characteristics			
Performance		Client throughput performance up to 8GB/sec	
Data durability		Up to 17 nines (99.999999999999999%)	
Connectivity			
Protocols		RESTful S3	
Client connectivity		60Gbps/base (6x10Gb/sec)	
Physical Size[2]			
Rack space requirements (rack units)	12RU	6RU	24RU
Configuration weight (kg/lbs)	274 kg/605 lbs	191 kg/421 lbs	656 kg/1,447 lbs
Power			
Power consumption - typical/max (W)	1.85/2.03 KW	1.38/1.51 KW	4.61/5.08 KW
Power consumption - typical/max (KVA)	1.89/2.06 KVA	1.39/1.53 KVA	4.67/5.12 KVA
Power characteristics		208-240V, single-phase or three-phase with redundancy and intelligent power	
Environmental[2]			
Cooling		Redundant high efficiency fans	
Temperature range- operating		5°C to 35C°	
Temperature range- non-operating		-40°C to 65C°	
		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	
BTUs/hr (typical/max)	6.31/6.92 K BTU/h	4.70/5.15 K BTU/h	15.71/17.22 K BTU/h
Carbon footprint (max)	0.001 Metric Tons	0.001 Metric Tons	0.003 Metric Tons

[1] 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.
[2] Rack not included, customer must supply rack and PDU

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