Cloud Product Comparison

When it comes to designing systems that deliver applications via cloud, choosing the right storage device or mix of storage devices is imperative. The best solution is to match the storage device to the intended customer use case, data demands and storage metrics

Seagate

CLOUD COMPUTE

Ideal for cloud data center customers with servers and storage systems requiring the highest level of performance in compute-intensive Tier 0 and Tier 1 applications, including content delivery networks, finance/banking, e-commerce and HD video distribution

CLOUD STORAGE

Ideal for cloud data center customers with servers and storage systems that require the lowest power with the highest capacities for general-purpose servers and bulk storage Tier 2 and Tier 3 applications like file server, backup and disaster recovery

	Tier 0	Tier 1	Tier 2/3
USAGE MODEL	**Data Crunching** Caching, logging, journaling, paging, indexing of hot data	**Data Delivery** Application and file serving of warm data	**Data Storage** Bulk storage of unstructured cool data
APPLICATIONS	OLTP, CDN, VDI, database	Database, online gaming, search, file serving, email	File serving, email, bulk storage, backup, disaster recovery
DATA DEMANDS	• Highest performance • Highest availability • Lowest data footprint	• High performance • High availability • Low data footprint	• Good performance • High data footprint • Low cost per TB
STORAGE METRICS	• IOPS/system • Cost/IOPS • TB written (TBW) over warranty period	• IOPS/system • Cost/IOPS • Cost/GB	• Capacity/system • Cost/TB • GB/day workload
SOLUTION	**Flash Storage**	**Performance HDD**	**Capacity HDD/Archive HDD**

	1200 SSD	600 Pro SSD	Turbo SSHD	Performance 15K HDD	Performance 10K HDD	Capacity 2.5 HDD	Capacity 3.5 HDD	Terascale™/ Value HDD
				Savvio® 15K	Savvio 10K	Constellation®	Constellation ES	Constellation CS
RELIABILITY AND DATA INTEGRITY								
Mean Time Between Failures (Hours) Annualized Failure Rate	— 0.44%	— 0.53%	2.0 M 0.44%	2.0M 0.44%	2.0M 0.44%	1.4M 0.62%	1.4M 0.63%	800K 1.065%
Total Terabytes Written (TBW) Over Warranty Period	14,600 to 3650	1080 to 24	—	—	—	—	—	—
Workload Rating (GB/day)	—	—	—	—	—	—	<1500	<500
Nonrecoverable Read Errors per Bits Read	1 per 10E16	1 per 10E16	1 per 10E16	1 per 10E16	1 per 10E16	1 per 10E15	1 per 10E15	1 per 10E14
Power-On Hours per Year	8760	8760	8760	8760	8760	8760	8760	8760
Bytes per Sector	—	—	4Kn / 5XXe	4Kn / 5XXn / 5XXe	512, 520, 528	512, 520, 528 (SAS) 512 (SATA)	512, 520, 528 (SAS) 512 (SATA)	512e (SATA)
Limited Warranty (years)	5	5	5	5	5	5	5	3
PERFORMANCE								
Sustained Transfer Rate (MB/s)	750	520	up to 246	up to 228	up to 204	up to 115	up to 175	up to 180
Random Read IOPS	110,000	85,000	562*	390	295	170	150	140 to 170
RV Tolerance @ 1800Hz	—	—	28 rad/s^2	28 rad/s^2	28 rad/s^2	16 rad/s^2	12.5 rad/s^2	12.5 rad/s^2
CONFIGURATION								
Capacity	800GB, 400GB, 200GB	480GB, 400GB, 240GB, 200GB, 120GB, 100GB	600GB, 450GB, 300GB†	600GB, 450GB, 300GB	1.2TB, 900GB, 600GB, 450GB, 300GB	1TB, 500GB, 250GB	4TB, 3TB, 2TB, 1TB	4TB, 3TB, 2TB, 1TB
Form Factor (in)	2.5	2.5	2.5	2.5	2.5	2.5	3.5	3.5
Cache (MB)	—	—	128	128	64	64	up to 128	64
Interface Access Speed	12Gb/s SAS	6Gb/s SATA	6Gb/s SAS	6Gb/s SAS	6Gb/s SAS	6Gb/s SAS, 6Gb/s SATA	6Gb/s SAS, 6Gb/s SATA	6Gb/s SATA
Instant Secure Erase (ISE)	—	—	Yes	Yes	Yes	Yes	Yes	Yes
Self Encrypting Drive (SED)	AES-256	—	AES-256	AES-256	AES-256	AES-128	AES-256	—
PowerChoice™ Technology	—	—	Yes	Yes	Yes	Yes	Yes	Yes
RAID Rebuild™ Technology	—	—	Yes	Yes	Yes	Yes	Yes	Yes

* Target real-world workload = 2× performance over 15K

†The Seagate Enterprise Turbo SSHD is a solid state hybrid drive that includes 32GB of NAND flash to increase performance.

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