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DATA SHEET

Redis on Flash

Big Data Needs Real-Time

Applications today are required to process terabytes and petabytes of structured or unstructured data and return responses at the speed of business. As crucial business decisions become automated, insights from your Big Data have to be extracted in minutes or hours, while traditional batch tools need days and weeks.

There are performance and cost challenges associated with this. You need the high throughput and low latencies of in-memory databases while handling billions of data points per second. You also need this performance with the cost effectiveness of Flash memory, so you can retain a competitive edge.

Redis on Flash: Cost-effective Real-Time

Redis on Flash technology enhances Redis to run on a combination of RAM and more cost-effective Flash memory. For datasets larger than 1 TB, this is the most cost-optimal way to run Redis with the same sub-millisecond latencies and extremely high throughput. Redis on Flash includes the characteristic Redis Enterprise stable high performance, zero downtime linear scaling and hassle-free true high availability.

Key Features of Redis on Flash

- Flash used as an extension of RAM
- Tiered access with keys and hot values in RAM, and cold values in Flash to minimize latency
- Configurable RAM: Flash ratios for optimizing price performance per workload
- Benchmarked to deliver > 3million ops/sec at sub-millisecond latency with an industry standard server
- Works with standard off the shelf Flash, and emerging innovations such as Samsung NVMe and Intel 3DXpoint

Benefits of Redis on Flash

- Compute real-time analytics with minimal resources
- Handle large datasets at over 70% operational cost savings
- Run Redis on Flash close to your solution either on premises with Redis Enterprise Software or on the cloud with Redis Enterprise Cloud
- All the benefits of Redis Enterprise (effortless scaling, always-on availability, stable predictable high performance) are built-in

"Redis Enterprise Cloud with Redis on Flash allows me to handle peaks in traffic that grow 2000% without any need to scale my database infrastructure."

- Ishay Green,

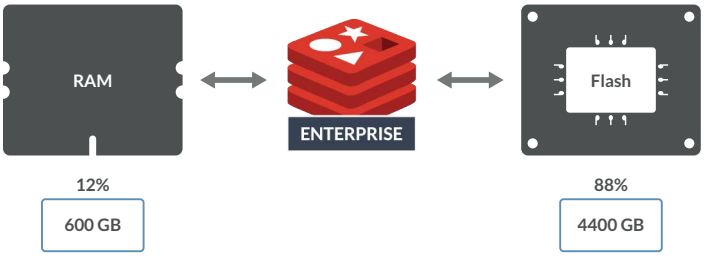
CTO, SPOT.IM

Redis on Flash Technology is included in:

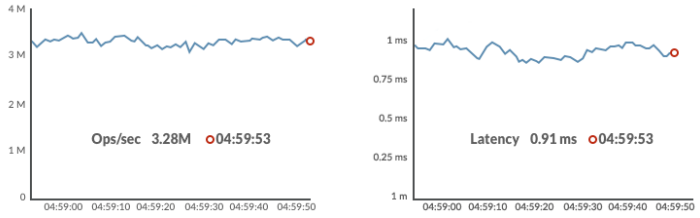
redisenterprise SOFTWARE

redisenterprise CLOUD

- **Bring the high throughput and low latency of inmemory databases to large datasets**
- **Reduce operational costs by over 70%**
- **Gain the advantages of Redis Enterprise technology's always on availability, effortless scaling, and resource efficiency**



Redis on Flash *stores keys and 'hot' values in RAM, while 'cold' values are kept in Flash. Redis on Flash preserves the Redis core architecture and is compatible with all Redis clients, data types and commands*



Performance Benchmarks: Single Server Results with Intel NVMe. Redis on Flash performed over 3 million operations per second with sub millisecond latency - comparable with the performance with Redis on RAM

	Redis on RAM	Redis on Flash
Datset Size	10TB	10TB
Databse size with replication	30TB	20TB*
AWS instance type	x1.32xlarge	i3.16xlarge
Actual instance size (RAM, and RAM+Flash)	1.46TB	3.66TB
# of instances needed	21	6
Persistent Storage (EBS)	154TB	110TB
1 year cost (reserved instances)	$1,595,643	$298,896
Savings	-	81.27%

**Redis Enterprise handles quorum issues at the node level requiring only 2 copies of data for high availability*

Comparing the infrastructure cost of deploying 10TB dataset on Redis on RAM and 10TB on Redis on Flash for a year on Amazon EC2

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700 E El Camino Real Suite 250, Mountain View, CA 94040 (415) 930 9666 redislabs.com