

PRAGUE MEETUP

Real-Time Data & AI

Scale, Speed, and Insights



Evelina Bern

Regional Lead
Nordics & Benelux

Agenda



Databases at the Crossroads of Scale, Real-Time, and AI

Zohar Elkayam, Principal Solutions Architect, Aerospike



Seznam.cz and Its Journey with Aerospike: Early Lessons from Migration

Michal Fizek, Development Team Leader, Seznam



Mission-Critical Policy Control (PCRF/PCF): Achieving Five Nines of Availability

Jan Čaboun, Senior Project Manager, Principal engineering



Impact First – How to Develop at Scale and Speak in Metrics

Odelya Holiday, Staff Software Engineer, Distributed systems engineer



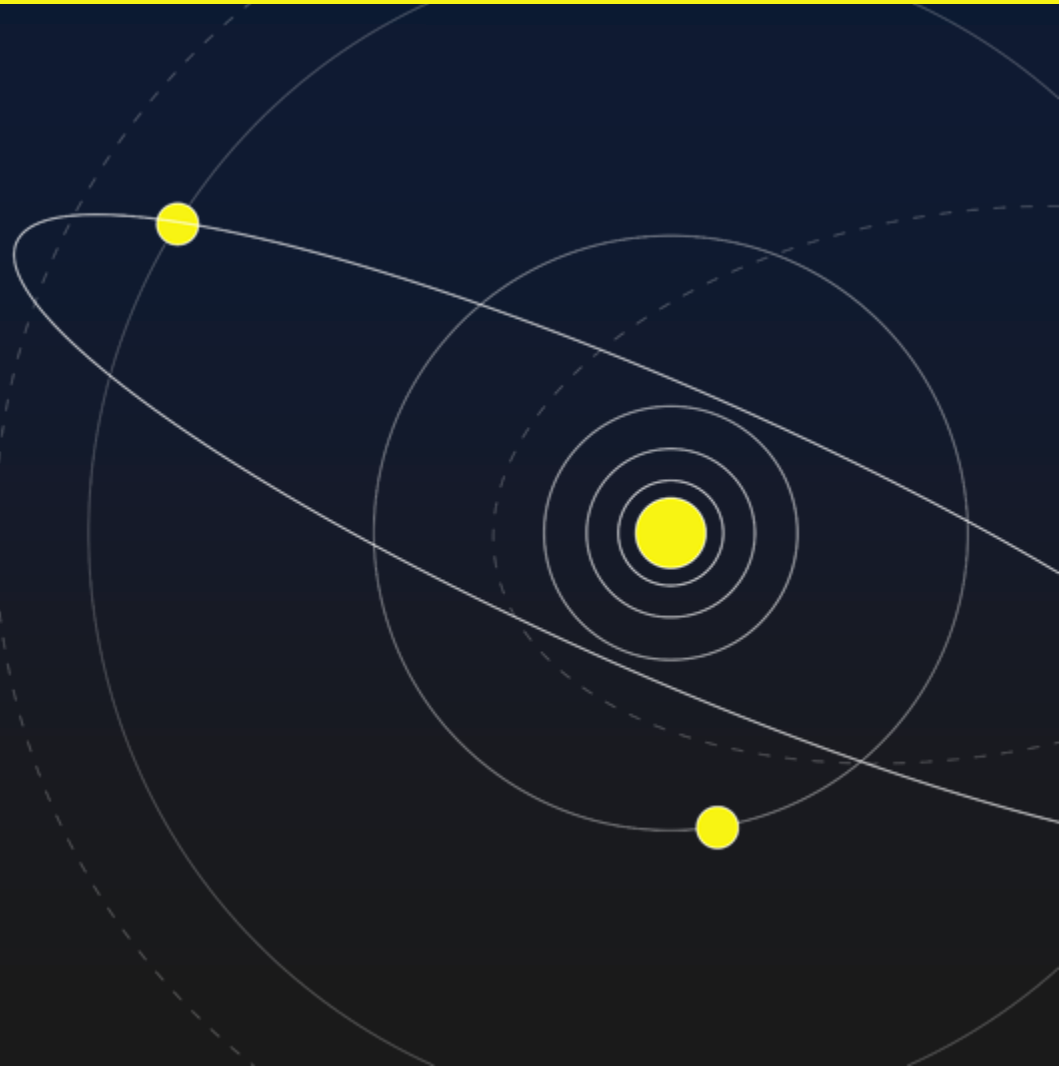


Meet Aerospike

↘ Massively scalable, millisecond latency, real-time database
built for infinite scale, speed, and savings.



Evelina Bern
Regional Lead, Nordics & Benelux



Aerospike can help...



The lowest latency
and highest
throughput at scale

- Ingest and process more data
- Faster, holistic decisioning
- Reduce risk
- Increase revenue/margins



Predictable
performance and high
availability

- Exceed uptime targets
- Avoid SLA penalties
- Deliver features faster
- Increase customer satisfaction



Built to maximize
operational
efficiency

- Greater data center efficiency
- Move across cloud providers
- Achieve sustainability targets
- Increase profit margins

Aerospike Demo - AWS



Quick Example

Imagine building a **User Profile** with a mixed read-write workload...

Use Case Details

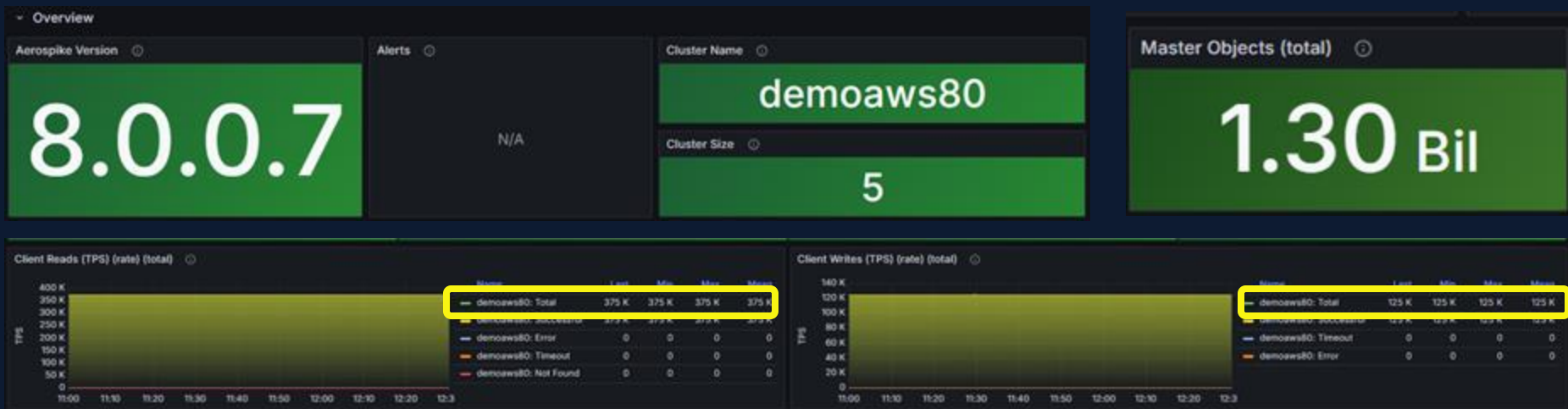
# of Documents	= 1.3 Billion
Avg. Document Size	= 2.5 kb
Total Unique Data	= 3 TB
Total Data on Disk (RF=2)	= 6 TB

Performance Goals

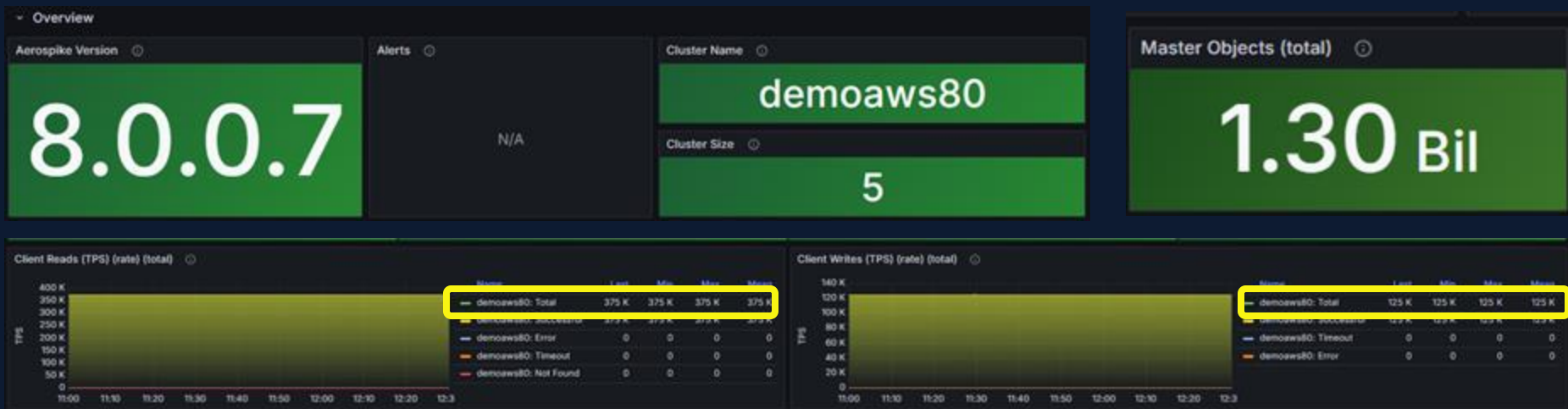
Operations per Second	= 500k
Reads per Second	= 375k
Writes per Second	= 125k
Latency p99	<= 1ms



Our Cluster

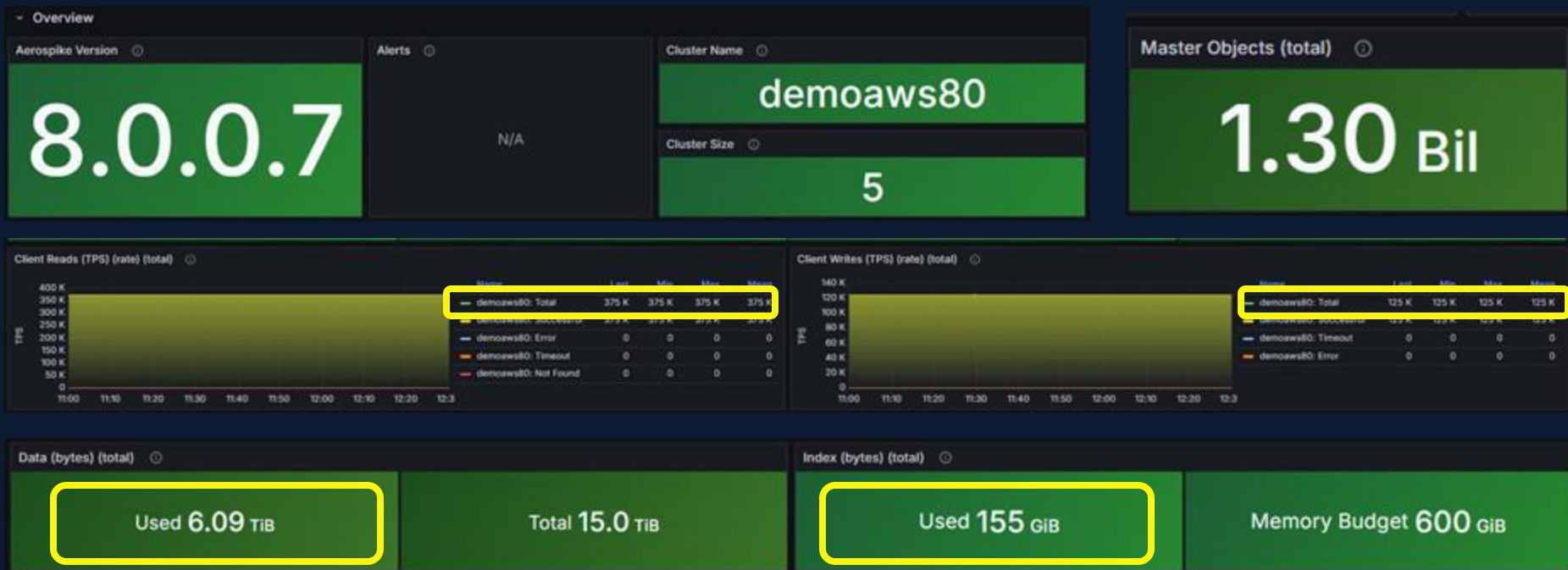


Our Cluster



500K operations per second

Our Cluster



Our Cluster



2.5% memory vs. data: no data is cached!

Aerospike Predictable Latency

▼ read

Percentiles read

p95 us **163**

p99 us **240**

p99.9 us **432**

▼ write

Percentiles write

p95 us **490**

p99 us **509**

p99.9 us **845**



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Well below the needed <1ms!



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What Hardware Did We Use

AWS Nodes	Total AWS Hardware	AWS List Price / Year
5 * i8g.4xlarge	80 vCPUs / 640 GiB RAM / 18,750 GB NVMe SSD	\$ 39,083

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What about doing 1M Ops/sec?

AWS Nodes

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Total AWS Hardware

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AWS List Price / Year

\$ 39,083



AWS Nodes

5 * i8g.4xlarge

Total AWS Hardware

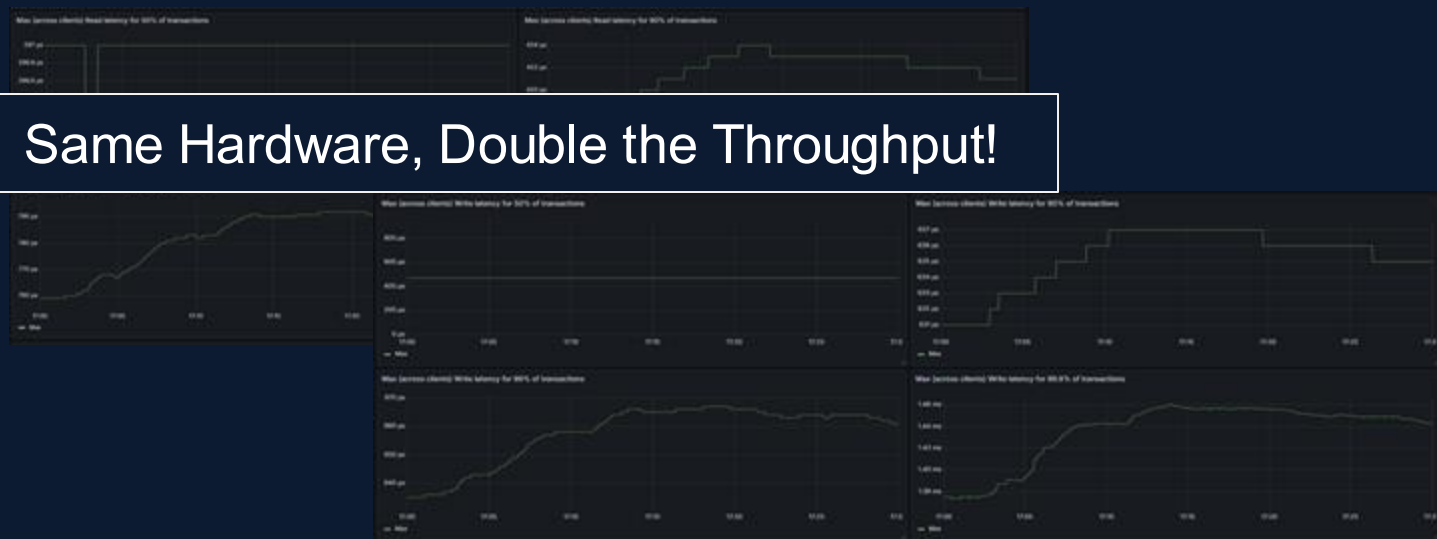
80 vCPUs / 640 GiB RAM / 18,750 GB NVMe SSD

AWS List Price / Year

\$ 39,083



Same Hardware, Double the Throughput!



Demo Summary

1.3 Billion

Unique Objects

6 TB on Disk

Total Data (RF=2)

500k (1M)

Operations/second
Mixed Workload

99.9%

<=1ms Latency
(reads & writes)

Only 155 GB

RAM Used
(2.5%)

Total Cost

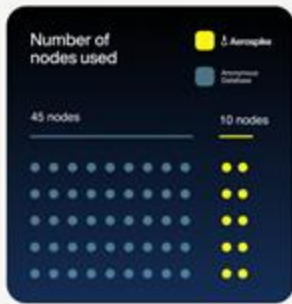
\$8,256/mon
(AWS & License)



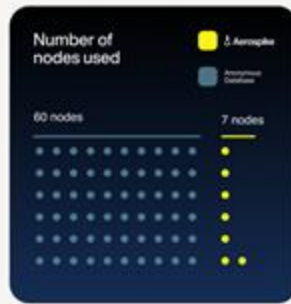
Cut database costs by 80%



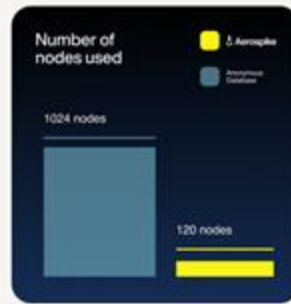
AppsFlyer cut servers by 78% with Aerospike.



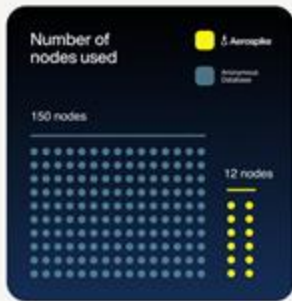
Wayfair cut servers by 88% with Aerospike.



PayPal cut servers by 88% with Aerospike.



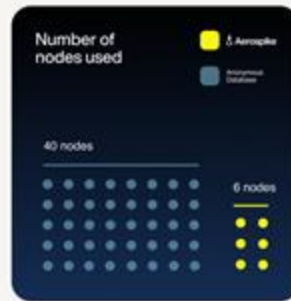
Adform cut servers by 92% with Aerospike.



Criteo saved 75% fewer nodes with Aerospike



Adjust saved 85% fewer nodes with Aerospike



Try Aerospike Pegasus



*For effortless cloud-scale
automation and benchmarking
running on AWS*



github.com/aerospike-community/aerospike-pegasus

Robust developer community and toolsets



Build beyond expectations

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developer.aerospike.com



Join our Discord Community

Collaborate and connect

discord.com/invite/NfC93wJEJU



Book: Aerospike Up & Running

Developing on a Modern Operational
Database for Globally Distributed Apps

aerospike.com/oreilly



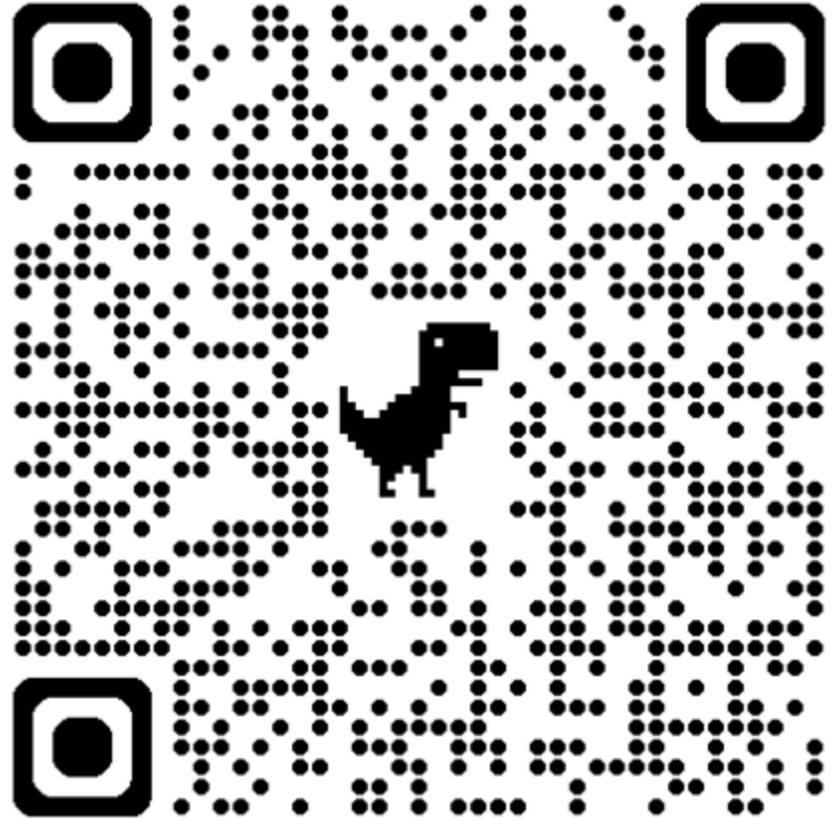
Get examples

Aerospike code samples and
demo apps

github.com/aerospike-examples

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Thank you

