

AEROSPIKE

SPEED at SCALE

Empowering
Low Latency
Flash Optimized
NoSQL

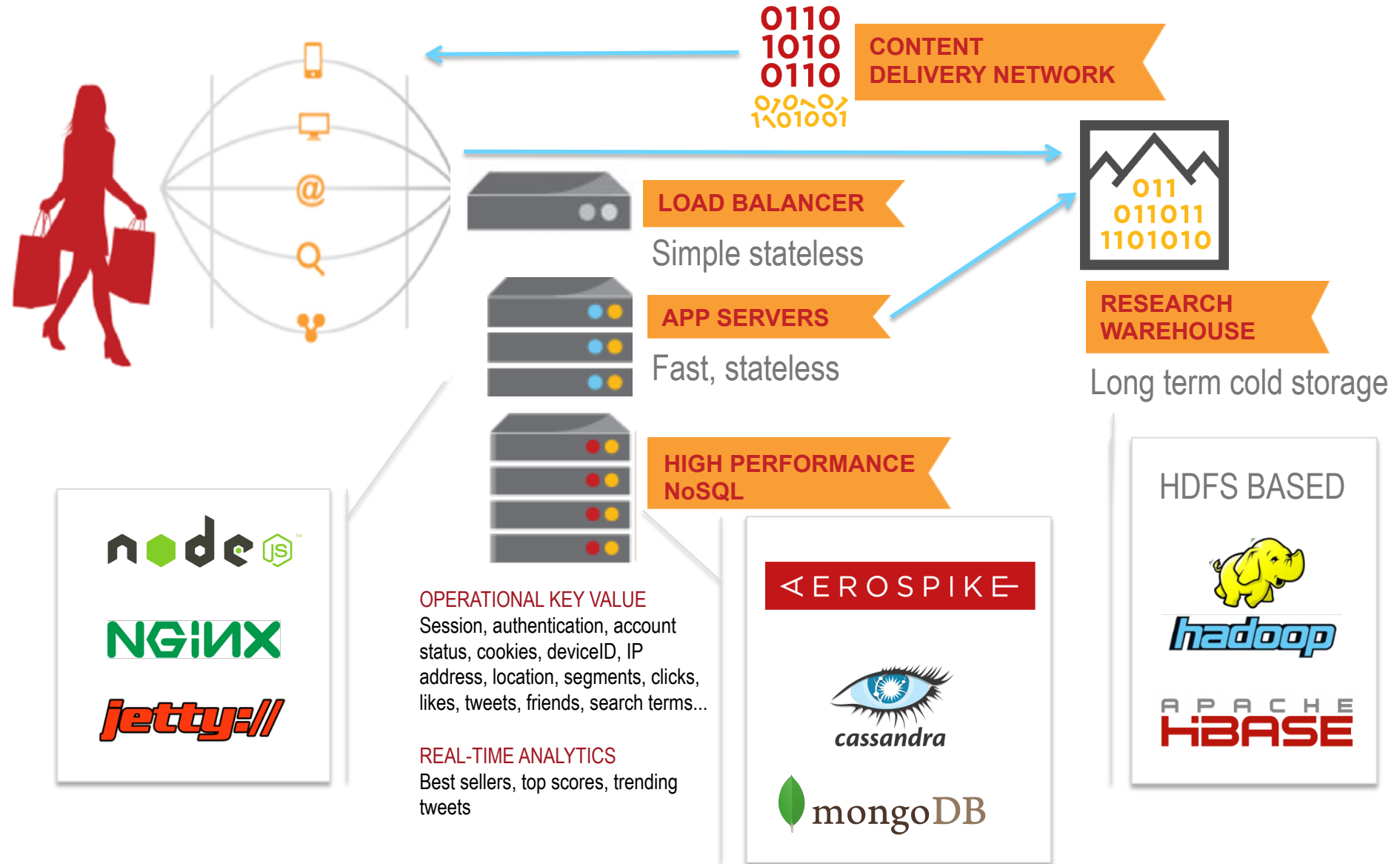


Brian Bulkowski
CTO & Founder
Aerospike

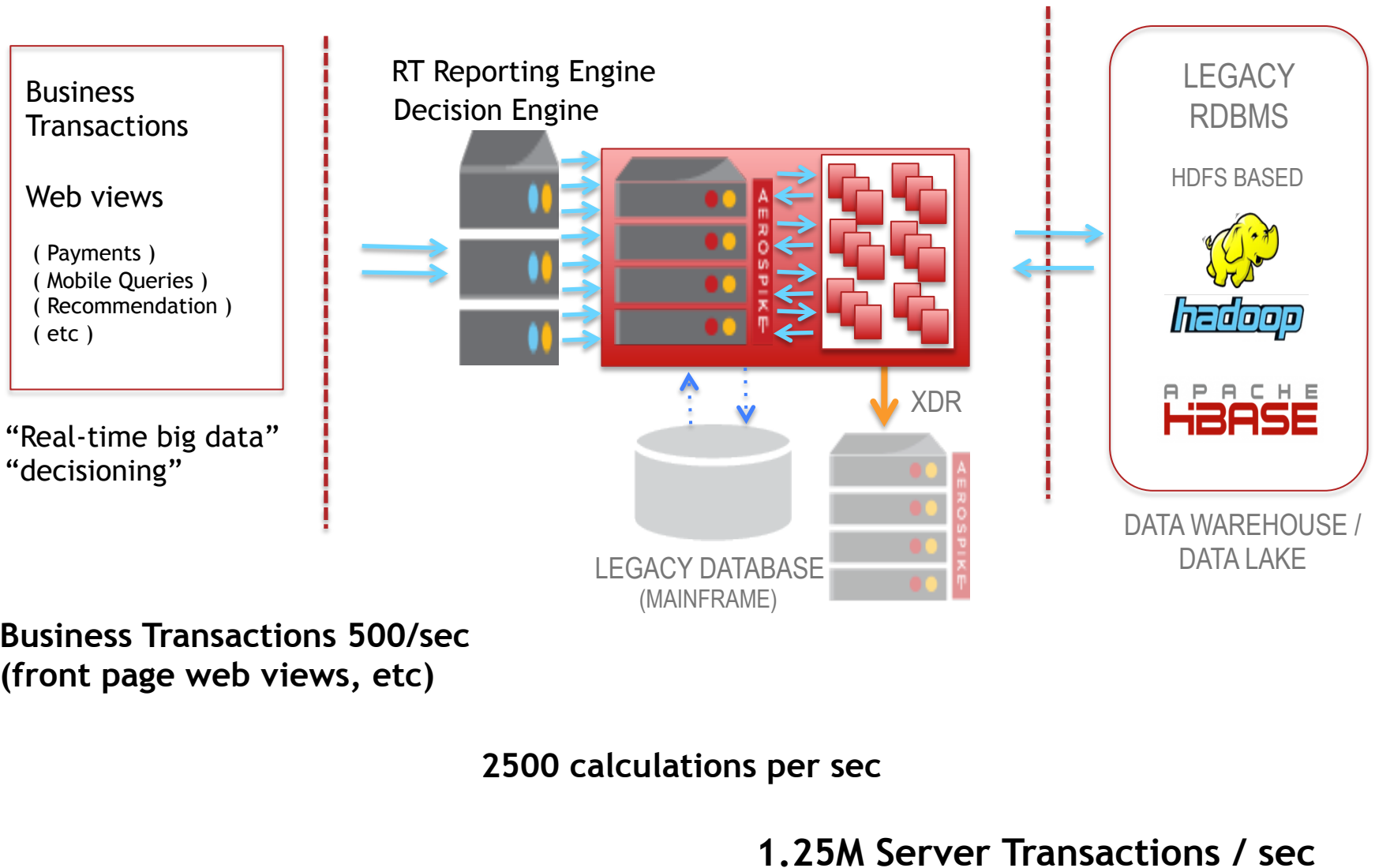
Aerospike history

- 2010 – Aerospike 2.0 deploys with first at-scale customers
- 2011 – Funding, company launch
- 2013 – Aerospike 3.0 adds indexes, analytics integration
- 2013 – Hot Analytics & Transaction Processing (now “HTAP”)
- 2014 – Open Source
- 2015 – Deployments in Financial Services, Telecom, etc

Modern Scale Out Architecture



The big data scale problem



Multiple engagements

- 10B to 50B objects
- 300 T before HA replication
- 2 M TPS
- 50 milliseconds per 5,000 queries
- Local and remote DR



What's an Exadata license cost ?



Wide, Fast SATA: Scaling Up High Performance Multi-Terabyte Pure Flash Storage with the Aerospike* In-Memory NoSQL* Database

Aerospike - the *Only* In-Memory (DRAM + Flash) NoSQL Operational DBMS.

“AppNexus* operates at massive scale while paying close attention to the economics of the platform. Aerospike’s flash optimizations running on top of Intel® SSDs have given us the price, performance, reliability, and serviceability we need to grow our business.”

– Timothy G Smith,
SVP Technical Operations

AEROSPIKE

- 100ms from click to view
- 4.5 Million TPS
- Over 100 TB
- Data Centers around the World

Source: Intel

In-chassis solution

- Supermicro 6037R-TXRF
Intel P3700 2T x 10 → 20T
\$2 per GB
1M++ IOPs per server
50M IOPs

*Very
High
IOP*



- Dell R720xd
SS, Micron 1T SATA x 20 → 20T
\$1 per GB
200,000 IOPS per server

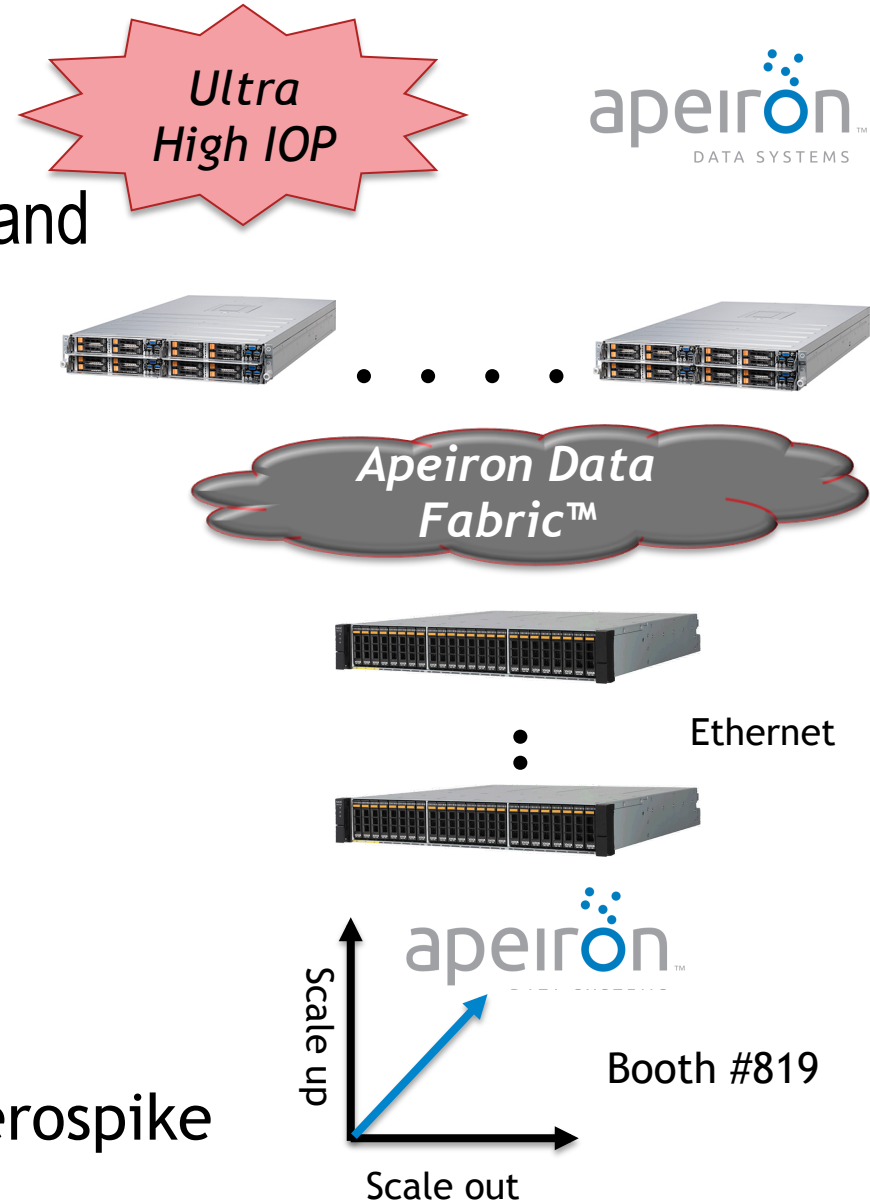
*High
IOP*



1 petabyte in 50 node cluster --- 100U? 150U?


External Virtualized NVMe Fabrics

- Apeiron Shared DAS™
Independent scaling of servers and storage
 - Storage array:
 - 144T/2U enclosure
 - 18M IOPs per 144T
 - 72 GB/s of bandwidth
 - 90us read latency
 - 1PB 8 enclosures
100M IOPs
- 1 petabyte- 16U storage, 16U Aerospike



SanDisk®

InfiniFlash 3U 512G
1M IOPS
2 Aerospike servers
SAS cards



Example
(qualifying)

1 petabyte in 6U InfiniFlash + 8U Aerospike

How can they do it ?

\$1 per GB?

\$1K per TB?

\$1M per PB?

2x lower prices
in 6 months?

12 months?



How much
was
Exadata ?

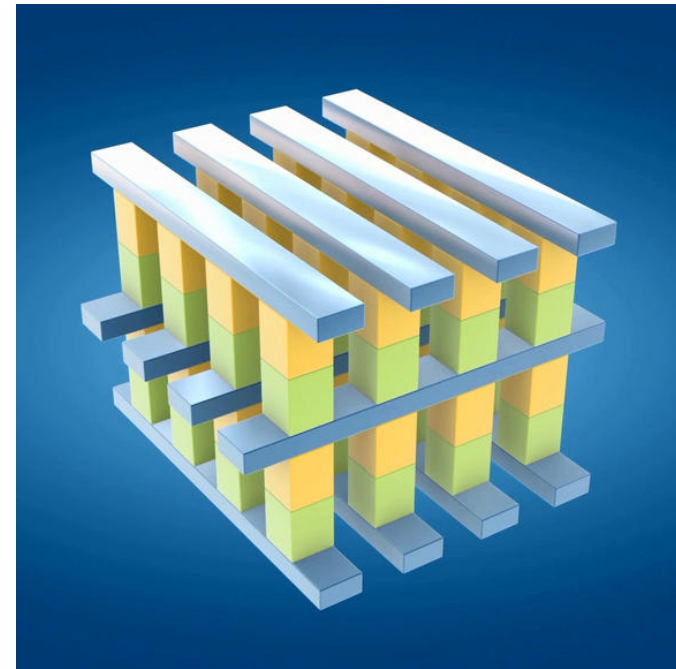


NoSQL achieves HA with replication

not enterprise storage managers

What about “3D Xpoint” ?

- We already have “persistent RAM” through our “fast restart” feature
- We won’t treat Xpoint like NAND (nor like DRAM) perfect for our codebase
- Hint: Indexes ! Indexes ! Indexes !



We love 3D Xpoint !

Aerospike has the experience

- Flash optimized from day 1
- 5 9's reliability
(*longest running cluster:
5 minutes of outage in 4.5 years*)
- Multi-million TPS clusters
in production today
- Enterprise Support of your POC & NoSQL design
- Used in financial services, telecom, gaming
(*and adtech of course*)



AEROSPIKE

SPEED at SCALE

Start a project
with Aerospike
today

