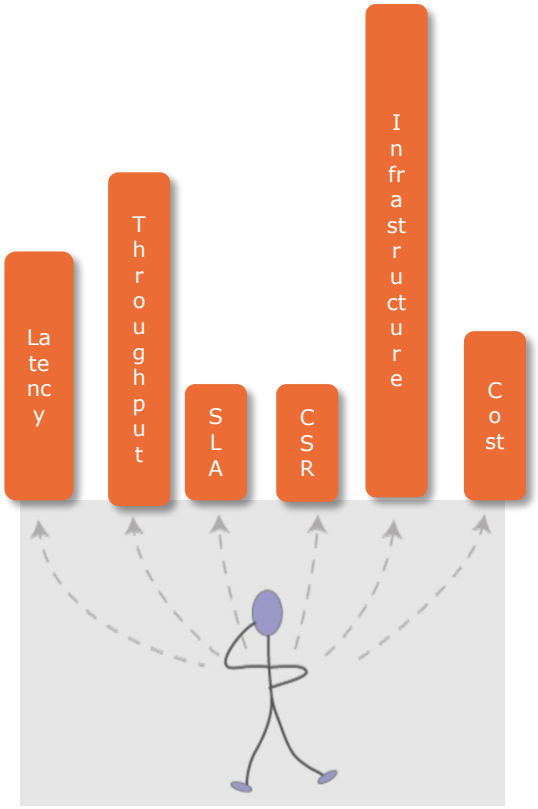
Cassandra Day
2022

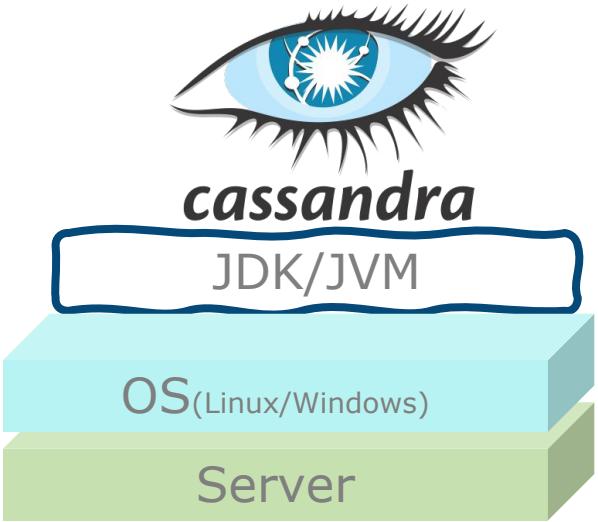
azul

Cassandra at Lightspeed

Michael Chong – Regional Sales Engineer, ASEAN

JVM Challenges in the Enterprise

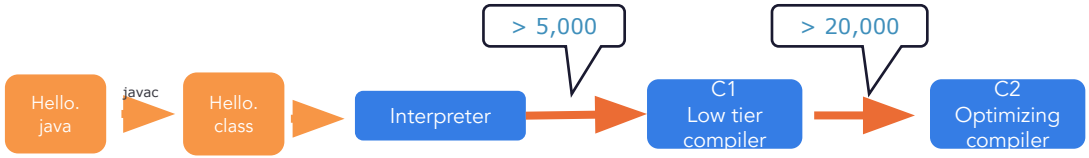




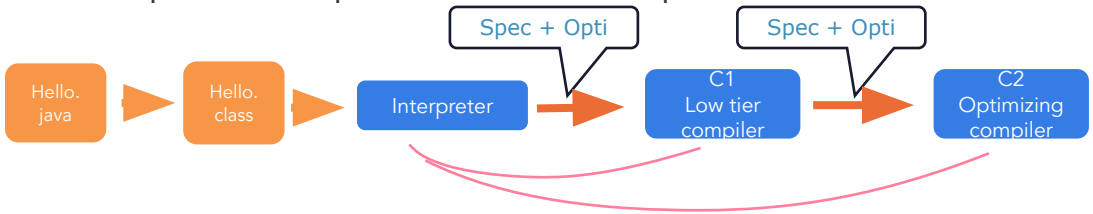
JVM Performance Challenges

Throughput

- Adaptive runtime JIT compilation:

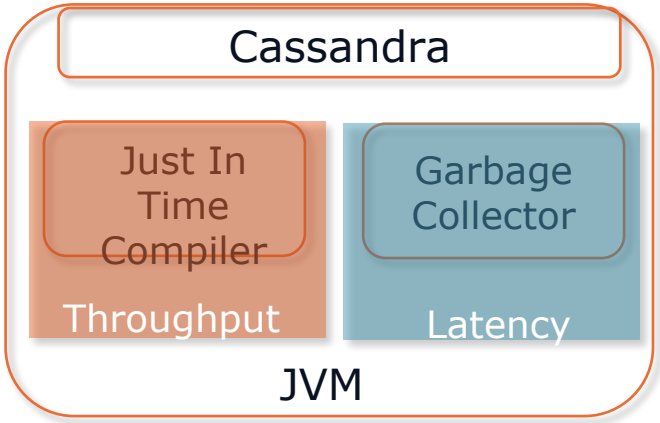


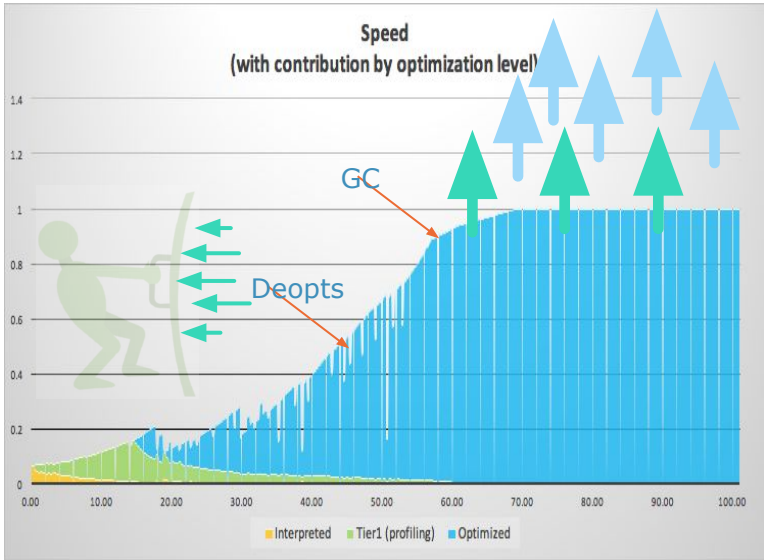
- Speculative Optimizations and De-optimizations



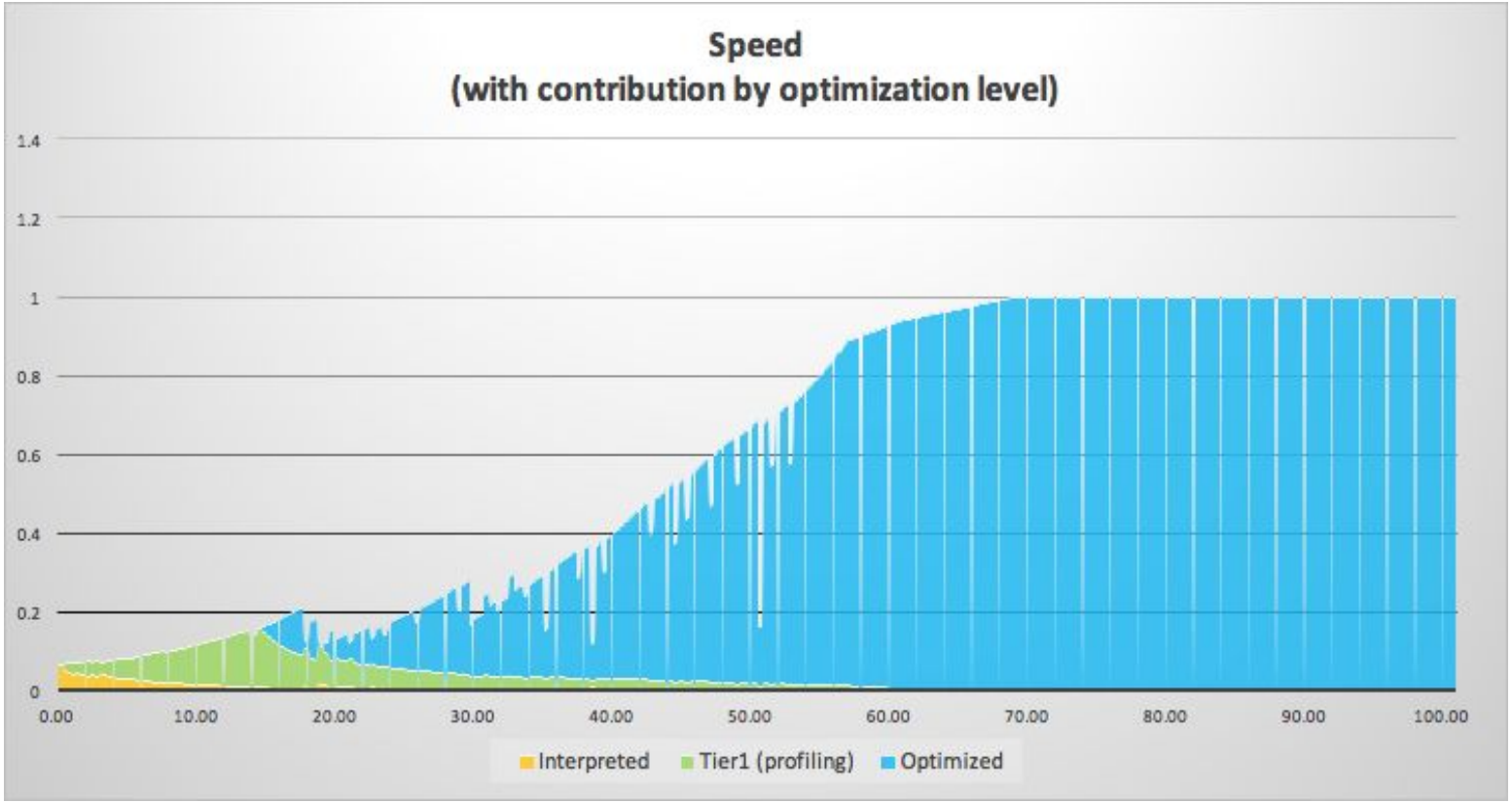
Latency

- Biggest issue is Garbage Collection

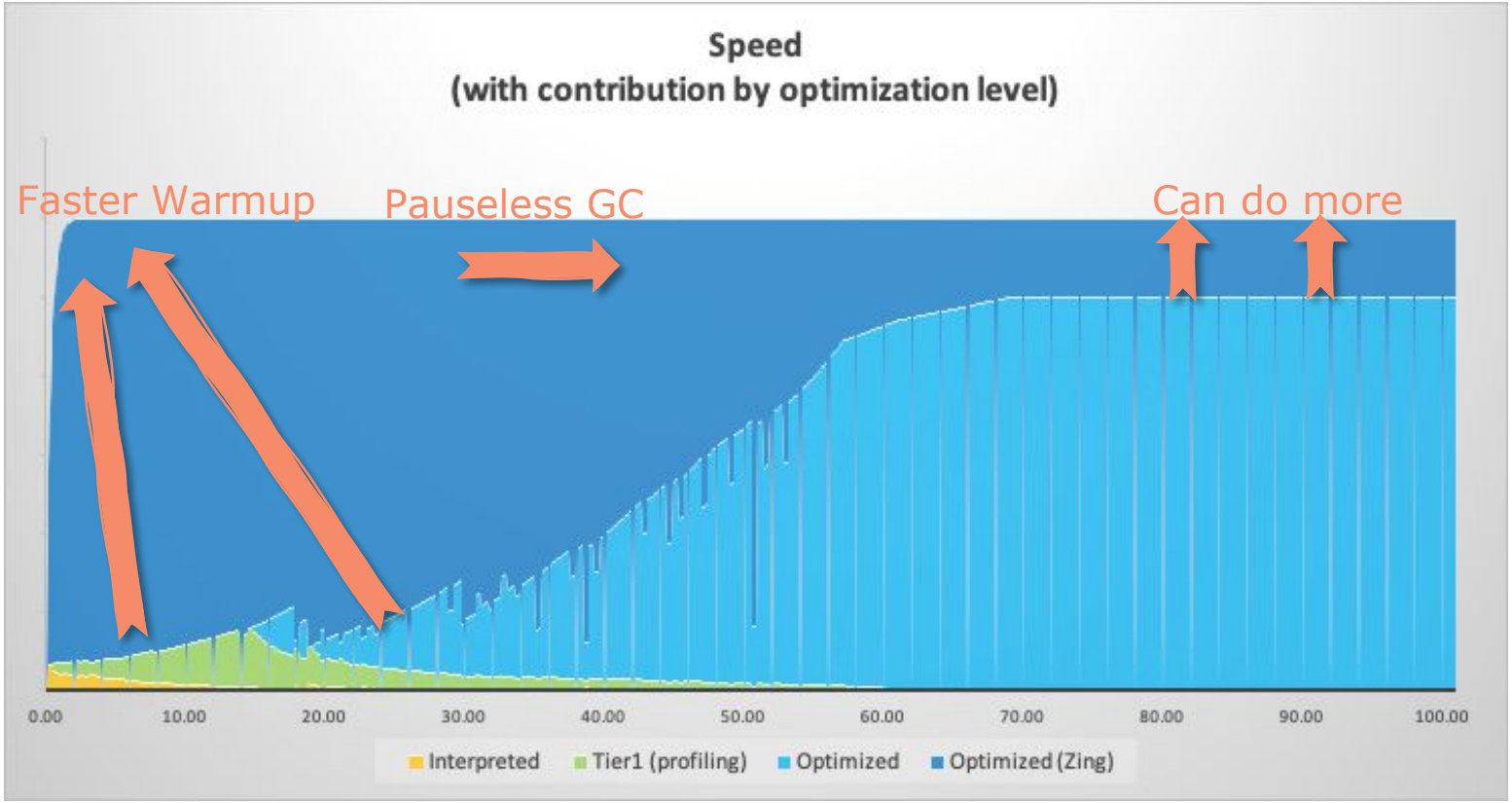




General Purpose JVM



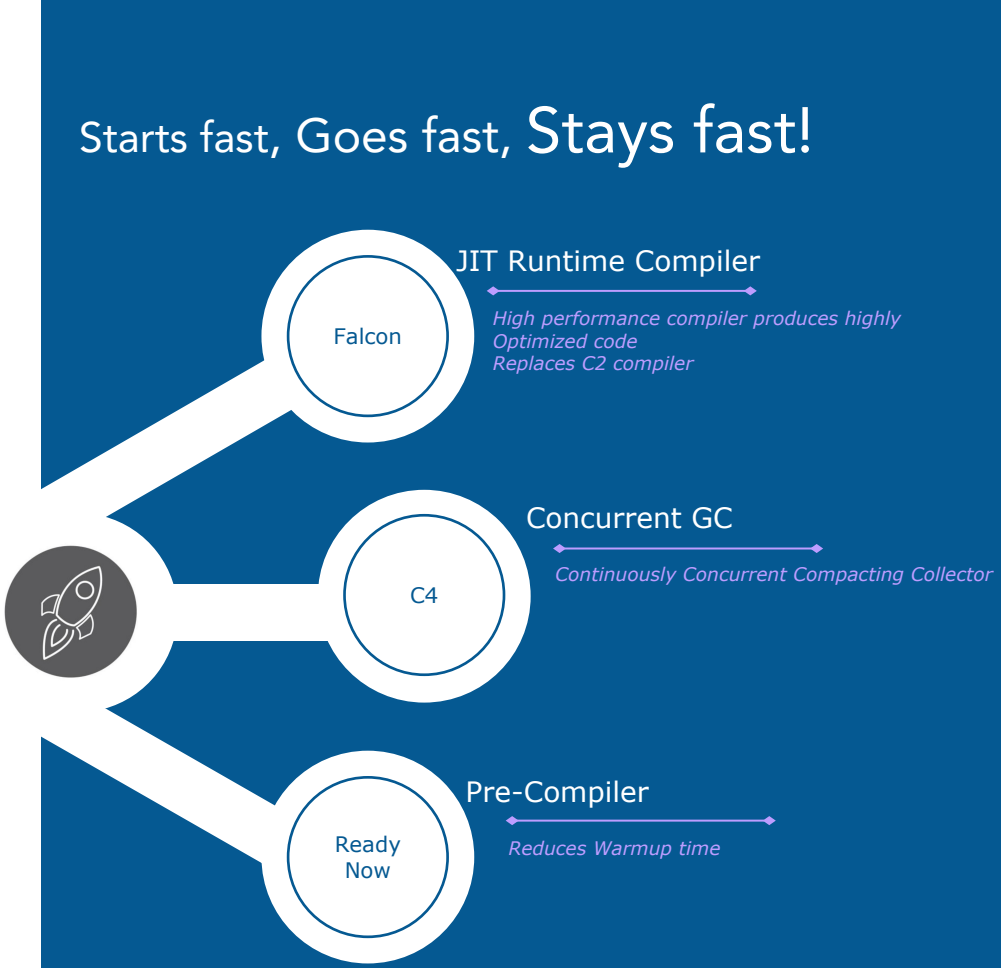
Target


Speed
(with contribution by optimization level)
Faster Warmup
Pauseless GC
Can do more
0.00
10.00
20.00
30.00
40.00
50.00
60.00
70.00
80.00
90.00
100.00
Interpreted
Tier1 (profiling)
Optimized
Optimized (Zing)

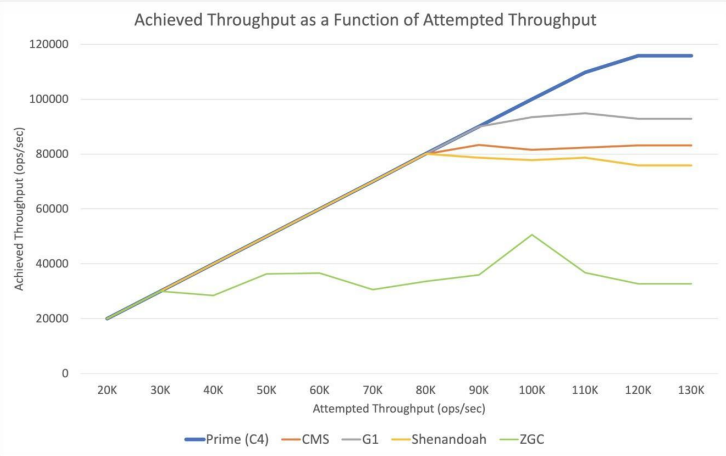
Prime: A Better JVM

(formerly Zing)

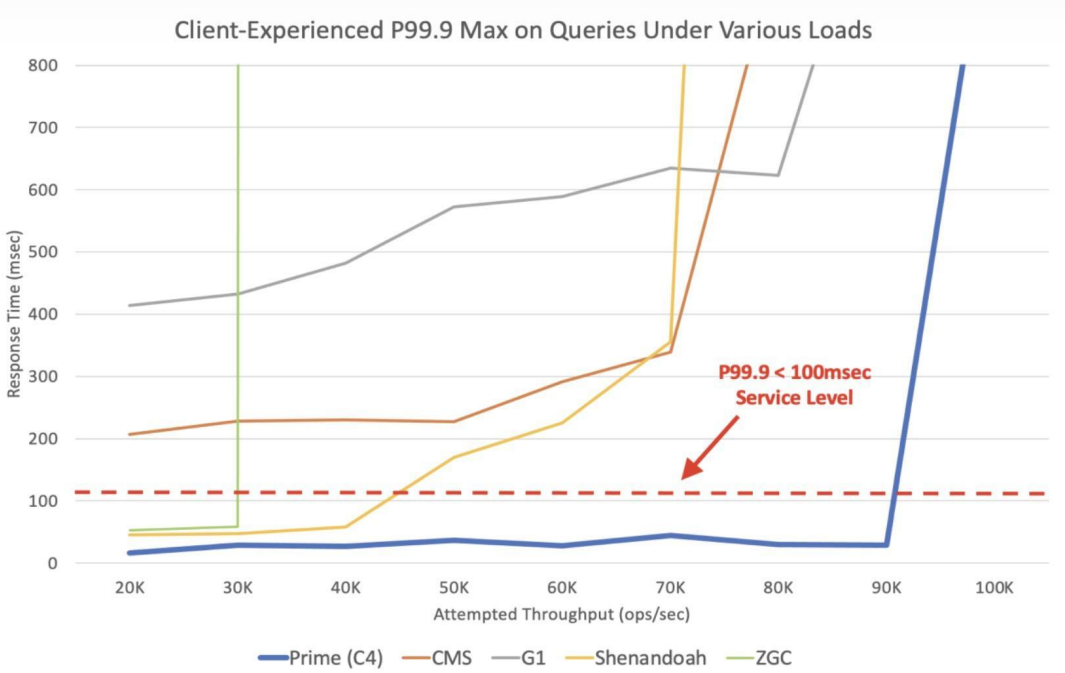
- Based on OpenJDK
- TCK/JCK certified
- Drop-in replacement for other JVMs
  - No Code Changes required
  - No Recompiles required



Cassandra Performance on Prime



Configuration	Highest Achieved Throughput (ops/sec)
Azul Platform Prime 11	115,865
OpenJDK 11 CMS	83,305
OpenJDK 11 G1	94,850
OpenJDK 11 Shenandoah	80,085
OpenJDK 11 ZGC	50,630



https://www.azul.com/blog/cassandra-performance-throughout-responsiveness-capacity-and-cost/

Maximize Efficiency, Optimize Cost

azul
The Java Platform for the Modern Cloud Enterprise

kafka
+
Azul Platform Prime

Higher Volume Ingestion

45% more efficient

Infra reduction for cloud savings

Faster streaming for microservices

Qualys.

25% infra & 20% infra spend reduction

Cassandra
+
Azul Platform Prime

Infrastructure optimization

2-5x more efficient under load

More efficient storage growth

Cloud cost savings

improve digital
by azerion

5X Improvement in TPS, 20ms SLA

Solr elastic
+
Azul Platform Prime

Transform Search Experience

1.5-5x more efficient under load

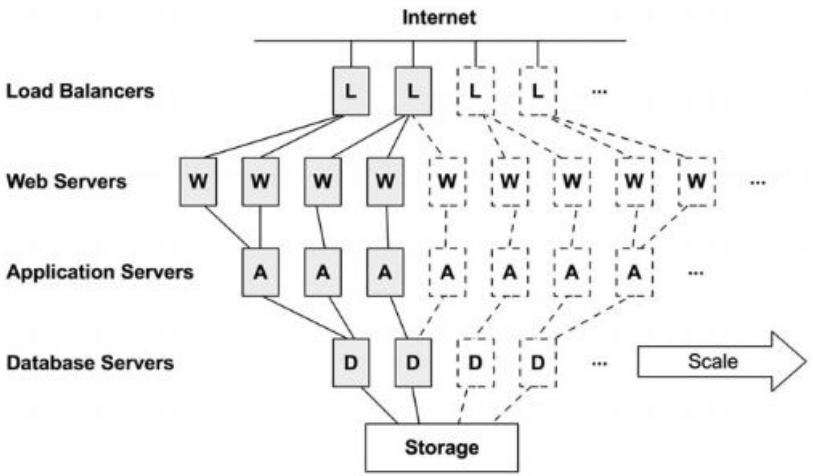
30% faster catalog, mktg search

zoominfo

147% TPS inc, 38% cloud spend reduction

Improve your Digital Transformation Projects; Allow you to grow with Confidence

Taboola



Taboola Powers Its Discovery & Ad Content to 1.4B People Each Mont

Reduces server footprint by 30-50% and achieves unprecedented performance, stability & security.

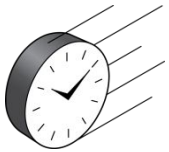
Taboola: 30 Billion Recommendations Daily

An epic shift is underway in the world of Java which has forced thousands of companies to make a choice: stay with Oracle or switch? It's a critical choice because it greatly impacts both the cost and performance of any company's Java infrastructure.

Taboola is one such company that faced this choice. Taboola's content discovery platform engages customers with precision-customized content. Ariel Pisetzky, as Vice President of IT, is responsible for Taboola's technical infrastructure that handles 1.4 million queries per second and serves 30 billion recommendations daily to 1.4 billion unique monthly users.

"The server would stop responding for 15 full minutes."

Benefits of Cassandra on Prime



Raw Performance

- Real-time requirement demands fast execution
- From machine scale to human scale, Prime delivers

Unmatched Reliability

- Eliminates disruptions, glitches and pauses
- Better customer experience = more revenue

Meet your SLA

- Meet your Competitive and Time-to-Market Challenges
- Meet all your Cassandra service delivery standards

Value

- Gain efficiency without incurring cost of additional nodes
- Maximize infrastructure utilization = Operational and capital efficiency

Fast Facts: Select Azul Customers in Asia Pacific

Some Global Azul Customers

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Thank You.

Example: Taboola

Taboola

Millions of dollars in savings.

"With Azul Platform Prime, we were able to reduce our front-end server footprint by more that 30%, which is hundreds of servers, and our database server footprint by about 50%. This translates into millions of dollars in savings, both hardware we freed up and hosting costs avoided."

- Ariel Pizetsky,
VP of IT

Example: Bazaarvoice

bazaarvoice

5x more infrastructure without Azul Platform Prime.

"Without Azul Platform Prime, we would be running 5 times more infrastructure than we are currently running now.

Azul has allowed us to *only* focus on our applications, new features and new roadmap items."

- Cody Bayer,
DevOps Engineer

Example: BIDS Trading

Reduced Number of Servers by 80% and Eliminated Troubleshooting Time.

"With Azul Platform Prime, we minimize infrastructure overheads, maximize performance, and, best of all, my engineers are free to focus on feature development, not performance, tuning and troubleshooting."

- Brett Vasconcellos, CTO