



Cassandra runs better on Zing

Deploy Apache Cassandra or DataStax Enterprise on Azul Zing® to reduce Capex and Opex while delivering improved reliability and scalability plus consistent performance

Java infrastructure runs better with Zing

Apache Cassandra is a breakthrough technology that is fast, highly scalable and reliable. Cassandra is often deployed with Solr, Lucene, Spark or Elasticsearch to support use cases that require rock-solid datastores with streaming data and/or the need for data indexing and search. All of these technologies are written in Java, the enterprise standard language for ease of development and deployment.

Unfortunately, many companies aren't able to realize the full potential of their Cassandra deployment. Applications may not be meeting external or internal SLAs or throughput requirements, or Cassandra may stumble as the dataset or load volumes grow.

The issues aren't due to the application, network or Cassandra – the cause is often the Java Virtual Machine (JVM). Sometimes the JVM needs extensive tuning for acceptable performance, and sometimes even that isn't enough. Most JVMs can hinder scalability and stifle performance. And that's where Azul can help.

Delivering Consistent Performance

Cassandra uses in-memory data storage at each node for fast reads. However, response times can spike if the

memory used by the node's JVM starts to fill. Once memory usage reaches a set threshold, the JVM stops processing to clean up old data and free up space, a process called garbage collection (GC). Individual nodes can pause for multiple seconds to complete this process. In production the symptoms are read time degradation and compaction issues, slow nodes that lead to connection time outs or unresponsive applications, and in some cases even cluster failures.

Azul Zing is optimized for Cassandra

Zing is proven to solve JVM issues for all Cassandra use cases. Zing also improves performance of your entire JVM-centric solution stack, including technologies like Lucene, Solr, Elasticsearch and Kafka.

Zing consistently eliminates Java garbage collection as an issue and reduces peak latencies by up to three orders of magnitude, with minimal tuning. With GC problems out of the way, your system will be able to meet SLAs even under growing loads, and users will be delighted by the responsiveness of the system. With Zing, you can finally realize the full value of your Cassandra deployment.

BENEFITS OF DEPLOYING CASSANDRA ON ZING

- Maximize the number of requests your Cassandra clusters can handle and minimize the time it takes to serve them
- Improve QoS eliminating Java GC-caused pauses, stalls and failures
- Meet your SLA targets with fewer AWS instances or fewer servers, reducing Opex and Capex
- Stop struggling with JVM tuning
- Deploy Zing with zero coding changes to your applications





Solution: An elastic Java runtime optimized for Cassandra

Azul Zing guarantees response time consistency, improves quality of service and reduces operating costs for Cassandra. Zing is proven in Cassandra deployments ranging from just a few nodes to thousands of server instances.

Out of the box, Zing reduces peak disruptions to a few milliseconds. You will immediately see better performance and responsiveness for your Cassandra-based applications. With Zing, you can beat competitors to market, meet service delivery standards and eliminate disruptions, glitches and pauses for a better customer experience and increased revenue.

Zing is fully certified for Cassandra

Azul Zing is certified with Cassandra and DataStax as well as related Big Data technologies such as Apache Spark™, Apache Solr™ and Apache Hadoop™. It is fully compliant with the Java SE standard and requires no application changes or re-architecting. Zing is easy to deploy, and you'll see the value right away.

Ideal Use Cases for Cassandra on Zing

- Real-time messaging
- Website personalization
- Web-scale ecommerce
- Credit card fraud detection
- Online financial services
- Payment systems
- Time-critical decision support
- Analytics

Get Started Today

Zing has been optimized by Azul to improve the overall performance of Cassandra, allowing you to fully achieve the results you expect from your investment. Azul's Cassandra experts will work with you to demonstrate how Zing will allow you to meet your performance, availability, SLA and throughput targets without recoding or re-architecting.

CUSTOMER SUCCESS

Feedzai Fraud Detection

Problem:

Processing pauses caused by a legacy JVM were causing fraudulent transactions to be missed, which created unplanned losses for card issuers.

Solution:

Azul partner Feedzai has a Cassandra-based real-time fraud detection system that uses Zing to ensure maximum streaming write throughput. With Zing, Feedzai can meet even the most demanding SLAs from some of the world's largest financial institutions.

"The real-time analysis of data to prevent fraud in the financial industry is key to predicting and preventing fraud. It's almost impossible to have ultra-low latencies – in the range of 5-10 milliseconds with a standard JVM – and our customers demand that. Azul powers the largest banks in the world and with peak load demands of up to 50,000 transactions per second, Zing will help ensure that we can deliver the best that artificially intelligent machines can offer."

– Nuno Sebastiao, Chief Executive Officer of Feedzai

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