

Improving Performance and Stability

Checkmate: Azul Platform Prime stops [Chess.com](#) glitches for 10M+ games/day



Challenge

Despite extensive tuning efforts, Chess.com was suffering from Java's "Stop-The-World" garbage collection pauses, which often caused multi-second application delays.

System-induced stalls in game flow were severely degrading the overall gaming experience for users and impacting their loyalty.

Solution

Azul Platform Prime was implemented to ensure consistent performance and predictable latency. No changes to the application or hardware configuration were needed.

Result

Azul Platform Prime eliminated Chess.com's application stalls, improved reliability, and enhanced players' experience.

The Chess.com application is a workhorse

It has over 65 million members and more than 250,000 concurrent users playing more than 10 million games online. Every day. But how do you prevent delays between turns that interrupt the game's flow? Azul Platform Prime has the answer.

It's an axiom of modern application performance: The more advanced an app, the more demands it places on infrastructure. This is true in big data, trading,

cybersecurity, search, and a range of other use cases. It's also true in the world of chess, a game that enjoyed renewed popularity following the Emmy award-winning Netflix miniseries *The Queen's Gambit*, which follows the rise of a chess prodigy from basement chess matches to global acclaim.

Whether face-to-face or online, the gaming experience is everything for chess players. Any disruption, be it noise, room temperature or (in the case of online chess) sluggish software, can ruin a player's concentration and change the outcome of the match.

Chess.com faced this very issue, a victim of its own massive success and exploding playerbase. With millions of users, the application often produced delays lasting several seconds between players' turns. This interrupted the flow of the game, made it less enjoyable and hurt user loyalty. Furthermore, in-house Java developers couldn't fix the issue, despite their extensive efforts to tune the Java programming language code used to build the Chess.com application.

The cause of these application delays? So-called "Stop-The-World" garbage collection pauses. That is, pauses in the Java code that result from a process which frees up memory on the infrastructure running the application. Garbage collection is a responsibility of the Java Virtual Machines (JVM) that are used to run Java application code.

That's where Azul comes in. Chess.com uses Azul Platform Prime, a highly performant Java runtime used by capital markets firms, manufacturers, ecommerce sites and digital advertisers – anyone who needs better application and infrastructure performance. The use of Azul Platform Prime checkmated the garbage collection glitches in Chess.com's Java applications and in its Java-based technologies, such as Jetty. In doing so, it eliminated application stalls altogether, and improved reliability and players' experience. Azul's solution was also a win for developers, increasing

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productivity by swapping their underlying JVM without any changes or tuning to their actual Java code.

Azul Platform Prime improves the performance and scalability of Java ecosystems with a highly optimized runtime that ensures consistent response times, reduces system stalls, and delivers better customer experiences – all with far less infrastructure. It boosts the number of transactions from the same hardware and speeds up Java performance even as loads increase. As a result, it can reduce capital expenses for servers by as much as 50%, cut operating expenses for cloud services with no over-provisioning and drive continuous value.

About Azul

Azul, provider of the Java platform for the modern cloud enterprise, is the only company 100% focused on Java. Millions of Java developers, hundreds of millions of devices, and the world's most highly regarded businesses trust Azul to power their applications with exceptional capabilities, performance, security, value, and success. Azul's customers include 27% of the Fortune 100, 50% of Forbes Top 10 World's Most Valuable Brands, all 10 of the world's Top 10 financial trading companies, and leading brands like Avaya, Bazaarvoice, BMW, Credit Suisse, Deutsche Telekom, LG, Mastercard, Mizuho, Priceline, Salesforce, Software AG, and Workday. Learn more at azul.com and follow us on Twitter [@azulsystems](https://twitter.com/azulsystems).

"I love chess. With Chess.com, my dream was to create the kind of chess platform that I wanted to use! Because Azul Platform Prime powers our Java-based platform, we don't have to worry about application speed or infrastructure costs. We can focus on our members' experience and rest assured that Azul Platform Prime will handle thousands of moves a second with the best performance ."

Erik Allebest CEO, Chess.com

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