



Azul Platform Prime ReadyNow

Solving the Java Warmup Problem

Java is the premiere language for running enterprise workloads, largely thanks to its high performance. The Achilles heel of Java performance, however, is the warmup problem: When you start a Java program, it takes a while for it to warm up to full speed. Even once it is fully warmed up, changes in the way it's being can cause a temporary dip in speed due to a deoptimization storm.

The business impact of the Java warmup problem is extensive. Trading applications lose money when they experience a slowdown in the middle of the day. Gaming and e-commerce apps that scale out new JVMs to handle spikes in traffic risk losing shoppers and players if those new JVMs perform worse.

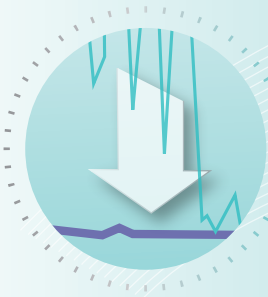
Enterprises attempt to work around the warmup problem in problematic ways:

- Clumsy attempts at warming up machines manually before allowing them to accept transactions
- Spending more money to keep resources around that they don't need because it's operationally hard to elastically scale to meet spikes in traffic

Azul Platform Prime's ReadyNow feature solves the Java warmup problem, making sure your JVM reaches full speed as quickly as possible and stays fast throughout the life of the Java program. ReadyNow monitors your Java application for usage patterns and the most efficient optimizations, then builds a profile of those optimizations. The next time you start your application, the JVM immediately performs those optimizations, getting your application to full speed as quickly as possible.

Based on past runs, ReadyNow knows which optimizations your app needs. The benefits of ReadyNow are:

- New JVMs reach peak speed faster
- You get consistent speed throughout the life of your Java app because ReadyNow can predict changes in usage patterns and eliminate deoptimization storms
- Ensures consistent, peak performance during critical times like market open or high-volume online shopping periods
- Lower cloud costs because you can maximize your elastic scaling operations, spending less money on overprovisioned instances and spare capacity that is only there to deal with slow warmup
- Reduced operational warmup risks caused by the need for synthetic tests or "fake" data

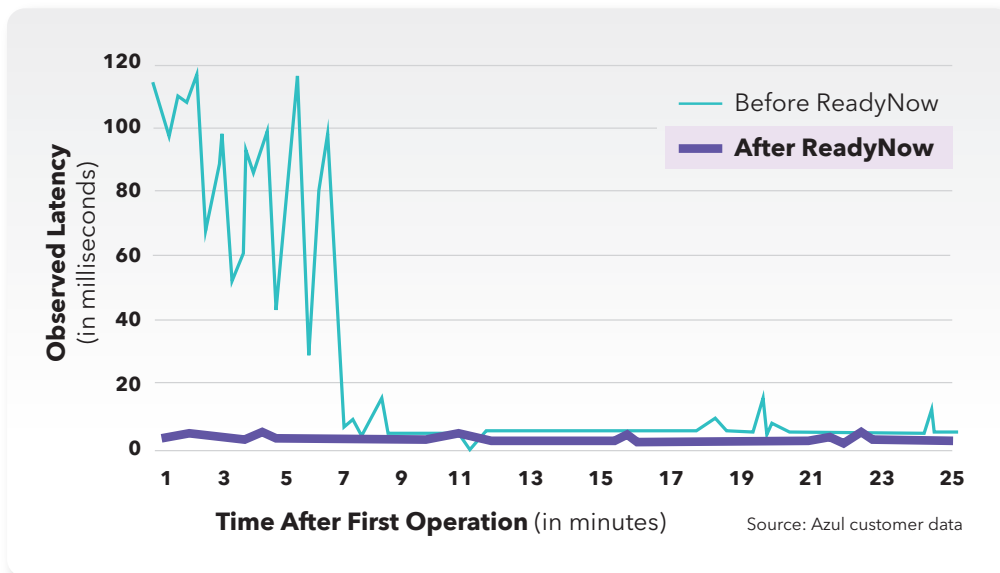


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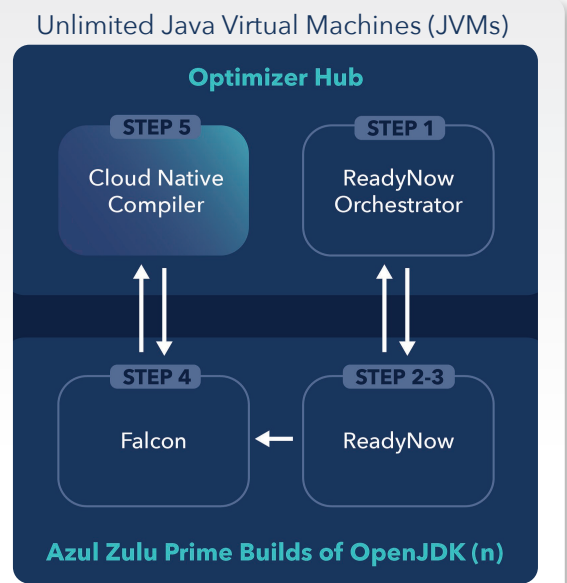
Azul ReadyNow Customers See Benefits in Action

- MEMX delivered 80x more performant response times with microsecond performance
- Mastercard accelerated fraud detection in microseconds at high volumes
- BIDS used 50% less infrastructure for electronic trading
- SuperCell reduced CPU usage by 20-25% for the same workload



How ReadyNow Works

1. ReadyNow Orchestrator sends MyApp profile to ReadyNow
2. ReadyNow tells Falcon what to compile based on MyApp profile
3. ReadyNow also writes back a new version of MyApp to ReadyNow Orchestrator
4. Falcon asks CNC to compile the code (optional)
5. CNC sends compiled code back to Falcon (optional)





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Azul ReadyNow Orchestrator - Giving Your JVMs Long-Term Memory

Azul is a leader in making cloud-native JVMs that can cooperate with each other and with dedicated cloud services to provide even better performance, stability, and cost efficiency. Azul Platform Prime's Optimizer Hub now brings ReadyNow into the cloud age with ReadyNow Orchestrator.

Traditional ReadyNow is a manual process of using one JVM's information to build an optimization profile and then distributing that profile to all other JVMs that use it. This can be operationally challenging, especially when working in containerized environments.

ReadyNow Orchestrator offloads the entire process of recording and using optimization profiles to Optimizer Hub. No additional manual steps are required. ReadyNow Orchestrator automatically records your profile, including taking multiple training runs for maximum effectiveness.

In addition to making ReadyNow deployments operationally smoother, ReadyNow Orchestrator makes sure you get the best optimization profile possible by recording profiling information from your entire fleet of JVMs and intelligently picks the best profile for the entire fleet.

Like all of Optimizer Hub, ReadyNow Orchestrator is free to use with all licensed installations of Azul Platform Prime.



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