



# Zing: Azul's advanced JVM is transforming the economics of Java and the Cloud

Discover new ways to drive down operating cost and improve the carrying capacity of your Cloud-based infrastructure

## Innovation Leaders Embrace the Cloud

Java-based applications and infrastructure are critical for nearly all production systems, spanning the realms of business, education and government. Java remains #1 or #2 in nearly every survey of programming languages, with no signs that any technology is likely to overtake Java within the next 5-10 years. Driven by a community of more than 10 million developers and a vast array of tools, libraries and utilities, Java is ideal for the rapid deployment of robust, highly scalable production systems.



## The Cloud has Become the Default for Development and Production

The economics of Cloud-based operations are compelling – resources are paid for only when required, and can be scaled up or down as businesses evolve and applications move into and out of production.

Cloud usage has also moved from incidental to strategic – when operations like Netflix deploy latency-sensitive applications supporting millions simultaneous users using Java-based Cloud infrastructure, it is clear that the economics of the Cloud are extremely compelling.

## Introducing Zing®

Azul Systems, the leader in Java performance innovation, has been continuously improving its flagship Java runtime, Zing, for over 10 years. Zing targets and solves all the performance and operational challenges of legacy Java runtimes, ranging from Oracle's proprietary Java SE to OpenJDK.

## Zing removes cost from Cloud operations

Azul's largest Zing customers typically deploy Zing in either public or private/hybrid clouds. While their deployments were often initiated to ensure sufficient capacity for spikes in demand, Zing has evolved into a major driver for reduced operational costs, in ways that include the following:

- Increased carry capacity at every configuration level. Cloud savings are often able to be reduced by 30-50% (or more) after deploying Zing
- Flexible automation. Zing works well with Docker and other standard and non-standard containers, and a variety of orchestration tools including Kubernetes
- Better latency profiles – Zing is immune to the traditional pauses, stalls and jitter that soak up troubleshooting resources
- Improved scalability – Zing adapts to shifts in demand and continues to deliver consistent performance

## BENEFITS OF ZING FOR CLOUD-BASED OPERATIONS

- Better resource utilization means lower Cloud spend
- Manage Zing hassle-free with Kubernetes
- Deliver stable and consistent response times under load without constant tuning
- Greatly improve efficiency of continuous deployment infrastructure
- Get optimized code into production faster with Zing ReadyNow! technology
- Speed time to market with minimal tuning needs and faster deployment
- Zing's advanced LLVM-based Falcon compiler generates genuinely faster code
- Proven scalability and performance proven success in web-scale Cloud deployments



## Select Public and Private Cloud Use Cases Fueled by Zing:

- Amazon-based real-time advertising auctions
- Web-based communities
- Marketing automation platforms supporting global businesses
- Opinion and rating sites with millions of simultaneous users
- eCommerce sites
- On-demand media
- SaaS-based workplace management

### Benefits

With Zing, Cloud deployments and services enjoy resource elasticity and consistently fast response times, even under unpredictable loads. Zing complies with the Java SE specification, is easy to deploy and requires no code changes to your application.

Zing is more than just another JVM. It includes three essential technologies that greatly simplify operations, improve runtime performance, and reduce the demand for unnecessary CPU capacity and engineering resources.

Zing's performance and efficiency are driven by:

- Azul's C4 collector – a proven, stable implementation of a pauseless set of garbage collection algorithms that eliminate Java-based pauses, stalls and jitter
- Falcon JIT compiler – an advanced LLVM-based compiler that produces highly optimized code, faster than C2 and both faster and more stable than Graal
- ReadyNow! technology – With ReadyNow!, Zing solves Java's warm-up problem. By re-using prior optimization decisions, Zing applications start up faster and stay fast

## Customer Success: Tier 1 Telco Problem:

Current JVM was not able to support the requirements of new Cloud-based services.

## Solution:

- Azul Zing.
- Flexible resource allocation
  - Each server can handle 30-50% more load due to improved Zing throughput
  - Ease of instance administration
  - Elimination of long garbage collection pauses that impacted SLA conformance
  - Ability to bill internal and external customers by CPU usage via Zing's monitoring tools
  - Improved overall performance

### Zing: The Best JVM for the Cloud

The Zing allows your Java apps to take advantage of Cloud flexibility and efficiencies. Your applications will run better – with more consistent performance, improved scalability and increased reliability. With Zing, you can deploy in the Cloud and offer Cloud-based services with confidence.

### Get Started Today

Zing's efficient use of every Cloud instance, operational flexibility, greatly reduced operating cost and ease of management allow business-critical Java applications to be deployed effectively in the Cloud. With a robust, scalable Java Cloud infrastructure based on Zing, you'll be able to support new business models and out-deploy your competition in ways that organizations using legacy JVMs just can't handle.

### Hassle-free Trials, Flexible Pricing

Zing is easy to download and use, and you can be up and running within minutes. Zing is also easy to purchase – and many Cloud-based customers have chosen unlimited, enterprise-wide pricing plans once they realize the magnitude of operational savings made possible by Zing

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