Cloud Cost Optimization for Java Workloads: Executive Summary

Power Up Your Jakarta EE

User Guide

The cloud computing market is exploding, forecast to reach $805 billion by 2024 and double by 2028. Yet 70% of companies overprovision cloud resources by at least 20%, creating a $200 billion optimization opportunity.

Key Challenges

Companies moving to the cloud face ballooning IT costs, poor spending visibility, difficulty forecasting budgets, and the need to rearchitect applications. These challenges require a structured approach to cloud cost management.

Seven Practical Optimization Strategies

Strategy	Description	Key Benefits	Implementation Options
Understand cloud usage and cost	Track metrics using provider and third-party tools	Visibility into spending patterns and waste	AWS Cost Explorer, CloudZero
Establish and track KPIs	Monitor resource usage, workload performance, unit economics	Data-driven decisions and benchmarking	Application Performance Monitoring tools
Use cost-effective instances	Deploy Spot, Reserved Instances, and Savings Plans	Up to 90% cost reduction on compute	Cloud provider purchasing options
Negotiate with providers	Utilize advance payment, multi-cloud leverage, marketplace	Better rates and flexible commitments	Enterprise Discount Programs
Right-size and autoscale	Configure proper vertical sizing and horizontal scaling	Eliminate idle capacity and match demand	Kubernetes HPA, Payara Cloud auto-scaling
Use efficient compute	Consider ARM-based processors like AWS Graviton	40% better performance, 73% less power	AWS Graviton, Azure Ampere Altra
Deploy high-performance Java	Replace standard OpenJDK with optimized alternatives	Faster code, reduced warmup, better scaling	Azul Platform Prime, Payara Cloud

FinOps Framework

These strategies align with the FinOps approach, which divides cloud cost optimization into three phases:

- **Inform:** Gather usage data and establish KPIs (Strategies 1-2)
- **Optimize:** Improve efficiency using data-driven insights (Strategies 3-7)
- **Operate:** Implement organizational changes to maintain optimization

Cloud Platforms for Jakarta EE Applications

For Jakarta EE and MicroProfile applications, Payara Cloud provides an optimized platform that aligns with multiple optimization strategies. It offers intelligent auto-scaling, efficient resource usage, and simplified deployment without containerization expertise. Payara Cloud intelligently manages the infrastructure based on your application's actual needs, reducing the complexity of manual right-sizing while optimizing costs.

Real-World Results

Organizations implementing these strategies with optimized platforms have achieved dramatic improvements without changing application code:

- 40% compute reduction for a major e-commerce company
- 30-50% server footprint reduction for an AdTech leader
- 95% reduction in operational issues for a major software provider
- 48% faster application performance at LMAX trading platform

The most effective approach combines all strategies with particular attention to high-performance Java platforms, which can deliver immediate benefits across legacy applications and cloud-native services.

This executive guide is based on "The Cloud Cost Optimization Cookbook" by Azul.

Interested in Payara? Try Before You Buy

PAYARA SERVER FREE TRIAL

PAYARA CLOUD FREE TRIAL

sales@payara.fish

UK: +44 800 538 5490
Intl: +1 888 239 8941

www.payara.fish