

AI-POWERED OPTIMIZATION PLATFORM

Maximize service quality, resilience and cost efficiency — autonomously

The challenge

Any company relying on IT to provide critical services to their users faces the challenge to keep delivering **maximum performance, resilience and cost efficiency** and match **SLOs** while the workloads vary, new applications are released and the underlying middleware and infrastructure layers change.

In today's world of complex applications, whether monolithic or microservices, and software architectures, often spanning both datacenter and clouds, this may require tuning **hundreds of parameters** and choosing among **thousands of configurations and cloud instances**.

A **manual approach** to this task defies even the best human experts - and does not align well with DevOps practices, faster release cycles, and the need to support the business speed. Negative consequences can be measured both in terms of missed opportunities and potential risks.

Opportunities

- reduce **over-provisioning and waste** of infrastructure and cloud resources
- deliver **higher service quality and user experience**, at the same cost
- prevent **business-impacting** performance and availability **issues**
- increase **operational efficiency** and **business agility**

Risks

- **unnecessary IT overspending** and higher-than-required **cloud bills**
- **reduced cost efficiency** and impact on market competitiveness
- **poor customer satisfaction**, potential customer churn, and SLA penalties
- **lost productivity** and **ineffective decision support**

Akamas optimization platform

The **Akamas optimization platform** is the unique, enterprise-grade solution designed to effectively support performance engineers, SRE teams, and developers in keeping complex, real-world applications optimized both in real-time and with respect to any planned or what-if scenarios.

Akamas optimization leverages **patented AI techniques** to autonomously identify optimal full-stack configurations driven by any **custom-defined goals and constraints (SLOs)**, without any human intervention, any agents, and any code or byte-code changes.

Akamas optimal configurations can be applied either i) under human approval (**human-in-the-loop** mode) or ii) automatically, as a continuous optimization step in a CI/CD pipeline (**in-the-pipe**) or iii) autonomously by **Akamas (autopilot)**.



Optimization Studies

Optimization Studies are used to optimize systems in test or pre-production environments, with respect to planned and what-if scenarios that cannot be directly run in production.

Scenarios may include: new releases, planned technology changes (e.g. new JVM), cloud migration or new provider, expected workload growth, resilience under failure scenarios (from chaos engineering).

Akamas uniquely features **full-stack, smart exploration** based on experiments & trials, **custom workflows** incorporating any load scripts, **automatic stability windowing detection**, and **UI-based insights** to evaluate tradeoffs among (sub)optimal configurations.

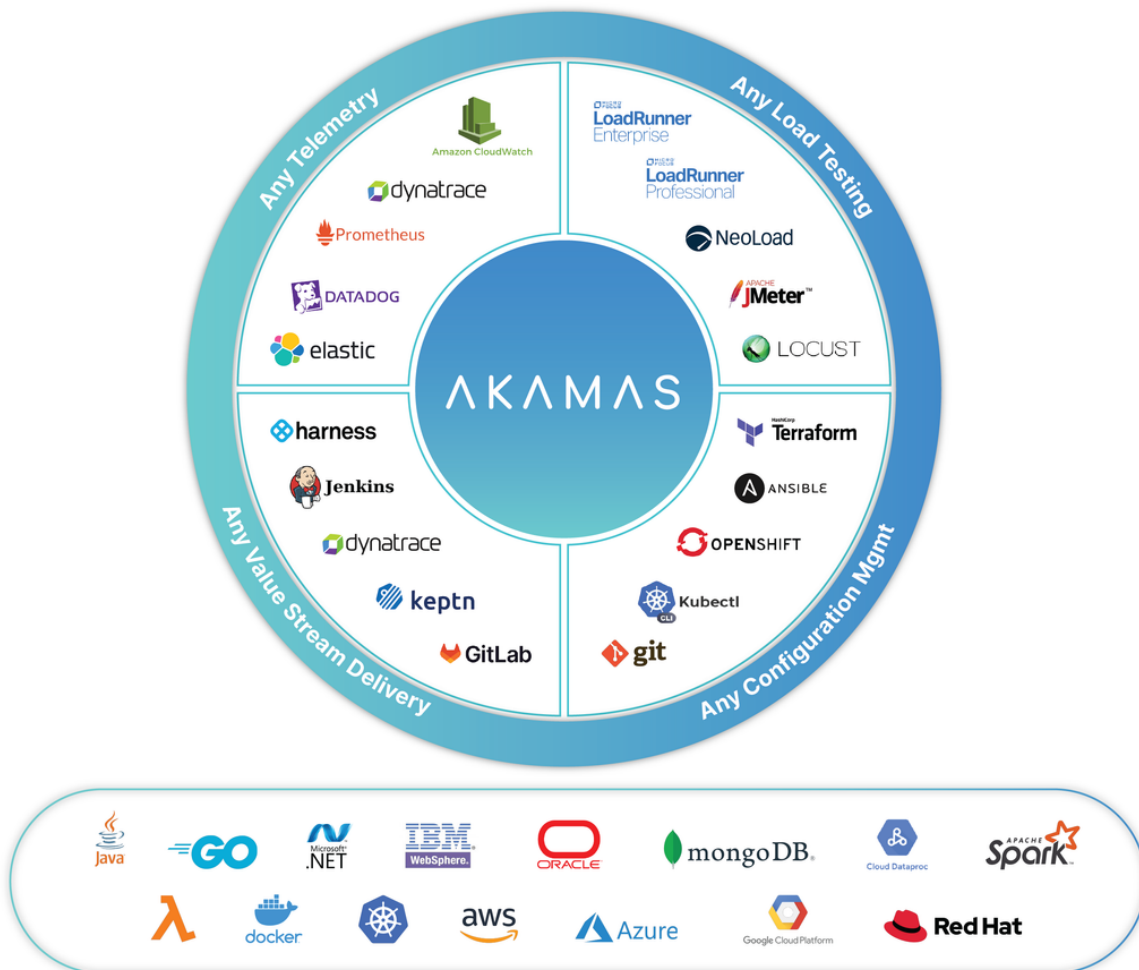
Live Optimizations

Live Optimizations are applied to production systems that need to be continuously optimized against dynamic varying workloads while running live.

A cloud-native application could be optimized live by having the Kubernetes and JVM parameters of its microservices dynamically tuned so as to minimize costs while matching response time objectives.

Akamas uniquely features **full-stack, dynamic, context-aware** optimization based on live observations, **safe recommendations** with respect to defined SLOs, and custom **safety policies** that ensure incremental changes are gradually applied to reach the optimal configuration.

Akamas has been designed around Infrastructure-as-Code (IaC) and DevOps principles. Thanks to a comprehensive set of APIs and integration mechanisms, the **Akamas** optimization platform can be easily extended to manage any system and integrate with any ecosystem.



Any system

Akamas can optimize **any system** with respect to any set of parameters chosen from the application, middleware, database, cloud, and any other underlying layers.

Akamas provides dozens of out-of-the-box Optimization Packs available for key technologies such as JVM, Go, Kubernetes, Docker, Oracle, MongoDB, Elasticsearch, PostgreSQL, Spark, AWS EC2 and Lambda, and more.

Optimization Pack provide parameters, relationships, and metrics to accelerate the optimization process setup and support company-wide best practices.

Creating a custom Optimization Pack does not require any coding.

Any ecosystem

Akamas can integrate with **any ecosystem** thanks to out-of-the-box and custom integrations with the following components:

- **telemetry & monitoring tools**, telemetry & monitoring tools and any other sources of KPIs and cost data, e.g. Dynatrace, Prometheus, CloudWatch, and CSV files
- **configuration management** tools and interfaces to apply configurations, e.g. Ansible, OpenShift, Git
- **value stream delivery** tools to support a continuous optimization process, e.g. Jenkins, Cloud Automation, and GitLab
- **load testing** tools to generate simulated workloads in test/pre-production, e.g. LoadRunner, NeoLoad, and JMeter

Key benefits

Cost reduction

-60%

decrease in infrastructure/cloud costs with the same application performance

Service quality

-70%

decrease in response time with lower fluctuations and peaks

Operational efficiency

-80%

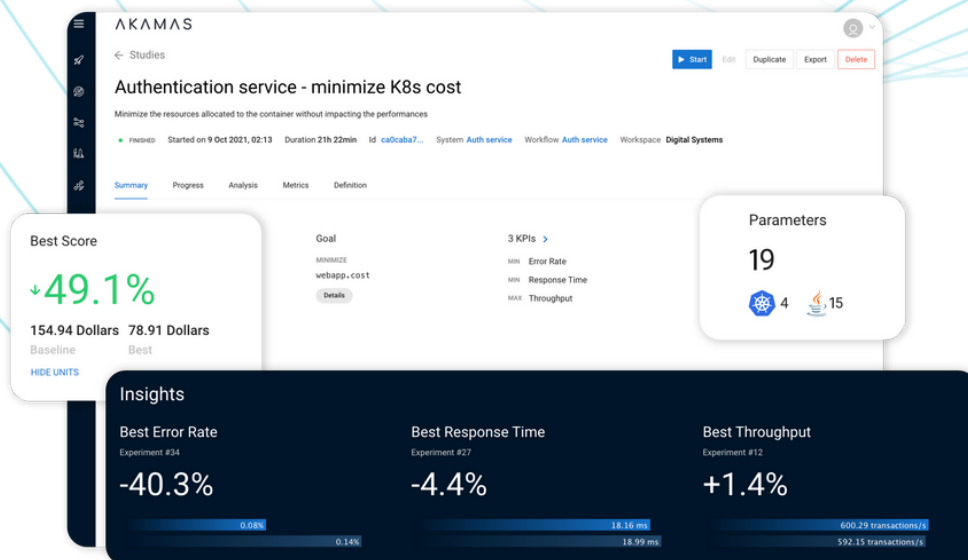
savings in engineering time spent for manual tuning tasks

Service throughput

+30%

increase in transactions/seconds with the same infrastructure resources

Contact us at info@akamas.io
to request a demo or join the 15-days **Free Trial**



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