

Enhanced AI Data Management: Optimizing Cloud Infrastructure and Performance

This case study highlights how Innovecs streamlined cloud infrastructure and improved performance for a leader in high-performance data platforms for AI and HPC. Our solutions focused on cost-efficiency, optimizing CLI tools, and migrating key systems, resulting in 20–30% cost savings and 2x–4x performance improvements.

Industry

High Tech

Location

Israel, USA

Project Duration

4 years

Cooperation Model

Team Extention

Team Composition

Backend Developers,
DevOps, Cloud Engineers

Expertise Delivered

Cloud & Infrastructure,
Performance Optimization,
Software Development

Technologies & Tools Used

AIOHTTP

ASYNCIO

AWS

DOCKER

GRPC

KUBERNETES

OCI

PYTHON 3.7-3.11

VICTORIAMETRICS

About Customer

The company is a prominent provider of advanced data platform solutions, catering to industries that rely on AI, machine learning, scientific research, and high-performance computing. Their core offering is a cloud-native, flash-optimized storage system engineered for smooth deployment across both cloud and on-premises infrastructures.

Project Summary

Innovecs collaborated with the client to address challenges in scaling AI/ML workflows, optimizing cloud infrastructure, and improving data platform performance. By focusing on infrastructure management, cost optimization, and software development, Innovecs delivered impactful results aligned with client's goals.

Challenge

The client faced significant challenges in managing their cloud infrastructure, **struggling with the seamless migration of Kubernetes clusters** between providers while maintaining service continuity. Their existing cloud and edge environments were **not optimized to support AI/ML pipelines efficiently**, leading to performance bottlenecks.

Additionally, rising cloud infrastructure costs became a concern, as **scaling operations without sacrificing performance proved difficult**. Legacy systems further complicated the process, causing inefficiencies and compatibility issues, while their **CLI tools lacked the performance** needed to handle increasingly complex data workloads.

Solution

« Cloud Infrastructure Management:

Successfully migrated the client's Kubernetes clusters from AWS to Oracle Cloud Infrastructure (OCI) and created a monitoring system for the Kubernetes cluster using VictoriaMetrics.

« Performance Improvements

Optimized code to enhance CLI tool speed, as well as automated package installation and virtual environment setup.

« Cost Optimization:

Optimized AWS Kubernetes cluster costs by implementing efficient resource management strategies and replacing Prometheus with VictoriaMetrics.

« Software Development:

Provided on-demand DevOps services to optimize deployment pipelines and infrastructure management.

Technologies Used

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Results



2x-4x speed increase

of the CLI tool commands, improving overall performance.



Upgraded Python from 3.7 to 3.11, ensuring

system compatibility and reliability.



Streamlined development workflows by reducing package

more efficient deployments.



20–30% reduction

in monitoring system costs after transitioning from Prometheus to VictoriaMetrics. Additional 30–40% cost savings through the ongoing Kubernetes migration.



installation time from minutes to seconds.

Streamlined development workflows by reducing package



seamless adoption by internal teams.

Conducted a cross-functional workshop on the new monitoring system, enabling

Business Value

» **Cost Efficiency:**

Significant cloud cost savings can be achieved, directly improving operational efficiency and reducing overhead expenses.

» **Scalability:**

A robust infrastructure ensures readiness for increased workloads and accommodates future growth, particularly in emerging fields like AI and HPC.

» **Performance Improvement:**

Enhancing critical tools and systems can boost user productivity, reduce system latency, and provide a seamless user experience.

» **Knowledge Empowerment:**

Internal teams can be upskilled by facilitating the adoption of new tools and processes, ensuring smooth transitions and effective use of technology.

About Innovecs

Innovecs is a global digital services company operating in the US, the UK, the EU, Israel, Australia, and Ukraine. We operate as a parent company, offering a tech-driven ecosystem of expertise, services, and solutions through specialized sub-brands: Innovecs High Tech, Innovecs Supply Chain, Innovecs Games, and Innovecs Play.



Quick facts

13

Years of cross-industry experience

25

Delivery locations worldwide

650+

Highly skilled developers, engineers, architects

150+

Happy clients

92%

NPS score

127%

Business growth over the past three years

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