

TAIKUN CLOUDWORKS & ARCTOS LABS EDGE CLOUD OPTIMIZATION SOLUTION BRIEF

INTRODUCTION

As cloud computing continues to boom, a major trend that is now gathering pace is edge computing. For clarity, let's define edge computing:

Edge computing brings computation and data storage closer to where it is needed, improving response times and saving bandwidth. By processing data at the edge of the network, it enhances speed, reduces latency, and increases overall efficiency.

Developers, architects, and engineers are integrating edge computing into their strategies, complementing traditional cloud models with distributed edge architectures. This allows applications to be executed closer to end-users, minimizing latency and improving performance. Cloud-native technologies like microservices, containers, CI/CD, and Kubernetes are now being deployed at the edge to enhance scalability and resilience. This combination is crucial for applications like IoT, autonomous vehicles, and smart cities, representing a significant trend in the IT landscape.

WHAT IS THE PROBLEM WE ARE SOLVING ?

When applying a distributed computing model, organizations face the challenge of understanding the cost and performance implications that arise from the exploding number of deployment options. Non-optimal deployment choices imply that applications may underperform or run at unnecessarily high costs.

The joint solution presented here provides enterprises with a transparent view and optimization capabilities to control the performance and costs of their deployments.

WHAT IS THE SOLUTION?

Leveraging real time telemetry data for informed decision making enables:

Optimal Distribution of Computing Capacity

Analyzing real-time telemetry data helps businesses distribute computing resources efficiently across various locations. This balance prevents bottlenecks, enhances scalability, and maximizes resource utilization, leading to cost savings and improved performance.

Optimal Placement of Workloads

Using telemetry data, businesses can strategically place workloads in optimal regions based on latency, processing needs, and cost. This ensures that high-demand applications are close to end-users, and resource-intensive tasks are in cost-effective regions, enhancing performance and efficiency.

Route Optimization

Telemetry data enables businesses to optimize data routes, reducing latency and network costs. By identifying efficient pathways and avoiding congestion, data transmission becomes faster and more reliable, contributing to a more responsive and cost-effective network.

THE ROLE KUBERNETES PLAYS IN SUPPORTING OPTIMISED WORKLOAD PLACEMENT

Consistency Across Environments

Ensures uniform deployment, allowing applications to run consistently across different infrastructures and enabling seamless workload deployment across regions and cloud providers.

Dynamic Placement and Scalability

Includes built-in automation for scaling and managing applications, enabling dynamic adjustments based on demand and telemetry data.

Enhanced Portability and Interoperability

Ensures application portability across different environments, facilitating easy movement and replication of workloads to optimize for latency, performance, and cost.

Reliability and Resilience

Automatically manages application health with self-healing capabilities, rescheduling failed containers and maintaining desired states to ensure reliability and minimize downtime.

WHY ARCTOS LABS & TAIKUN CLOUDWORKS



Taikun CloudWorks

Taikun CloudWorks – Multi-Platform, Multi-Cloud Kubernetes Automation and Application Delivery Platform. CloudWorks was designed to make Kubernetes invisible and allow users to deploy applications on top of Kubernetes easily and without operational complexity.

CloudWorks is a pay-for-use solution and has a significantly lower cost compared to the other solutions on the market.



Arctos Labs Edge Cloud Optimization

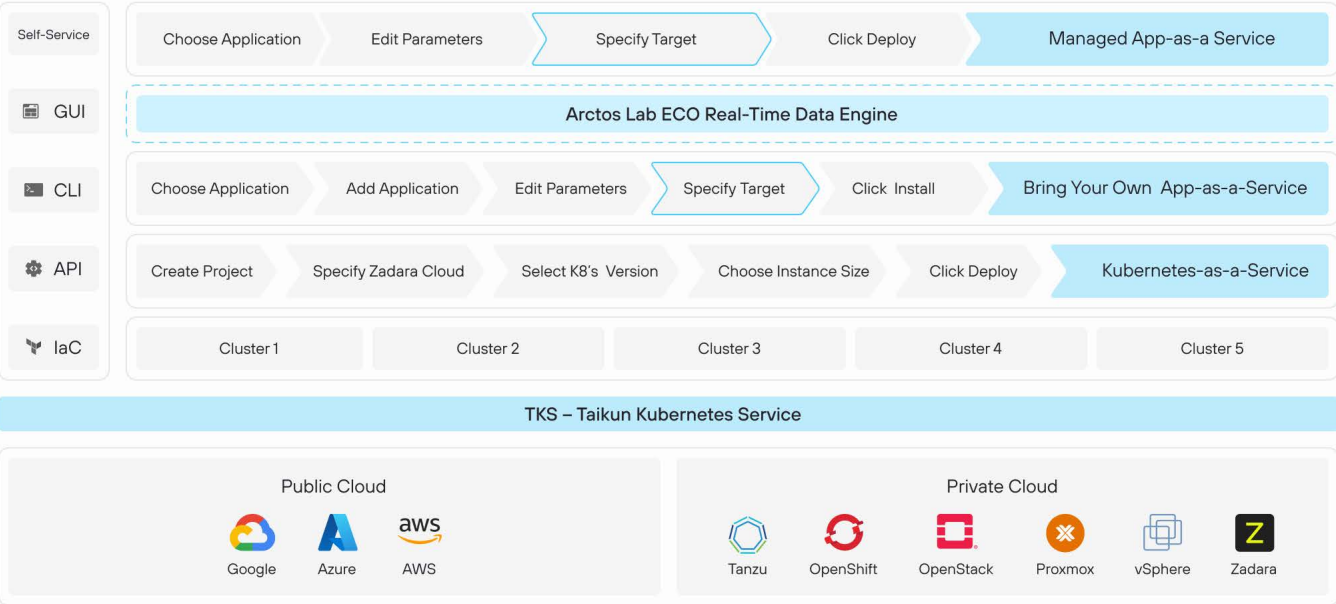
Arctos Labs Edge Cloud Optimization (ECO) enables organizations to optimally select the locations for the components of their distributed applications. This optimization takes cost of compute, cost of networking and application constraints into account to identify the best location across the vast options that may be available through Taikun CloudWorks. The system may operate in two modes, either the system autonomously selects and deploys the applications or the system provides its selection for the user to approve before deployment.

Taikun CloudWorks brings a comprehensive set of capabilities that automate 99% of Kubernetes Operations and Application deployments. Arctos Labs ECO adds the intelligence that is needed when the number of candidate locations grows beyond what is easy to comprehend, or when application dynamics increase.

Through this solution, we add a unique feature of optimization to the Taikun CloudWorks powerful and truly global integrated cloud platform enabled through the ecosystem of partners connected to Taikun.

The end result is that Kubernetes clusters and applications can be delivered across a diverse public or private infrastructure all from a single pane of glass. This self-service platform enables the enterprise and MSPs to leverage the benefits of Kubernetes without deep subject matter expertise.

ARCHITECTURE OVERVIEW



USE CASES

Telco Industry: Enhancing 5G Network Performance

CHALLENGE:	SOLUTION:	BENEFIT:
Managing ultra-low latency and high bandwidth requirements for 5G networks across multiple locations is complex and costly.	Arctos Labs ECO optimizes compute location selection to minimize latency and costs. Taikun CloudWorks simplifies multi-platform Kubernetes deployments with a cost-effective, pay-for-use model.	- Improved network performance - Reduced latency - Lower operational costs for superior 5G services.

Cloud Service Provider (CSP): Optimizing Multi-Cloud Deployments

CHALLENGE:	SOLUTION:	BENEFIT:
Balancing cost, performance, and compliance in multi-cloud environments.	Arctos Labs ECO selects optimal deployment locations based on cost and performance. Taikun CloudWorks offers seamless Kubernetes automation across multiple clouds at a lower cost.	- Efficient multi-cloud management - Optimized resource usage - Reduced costs for enhanced service delivery.

Enterprise: Streamlining Global Application Deployment

CHALLENGE:	SOLUTION:	BENEFIT:
Deploying and managing applications across regions to support global operations efficiently.	Arctos Labs ECO ensures optimal application component placement for performance and cost. Taikun CloudWorks provides easy Kubernetes management across clouds with automation and cost savings.	- Optimal application performance - Streamlined global operations - Reduced IT costs.

THE OUTCOME

Reduce Costs



Combining Taikun CloudWorks with Arctos Labs ECO offers a significant opportunity to reduce cloud-native computing costs while expanding application and infrastructure services. Compared to existing hyperscale managed Kubernetes offerings, switching to Taikun CloudWorks can save at least 30% on management fees. Additionally, Arctos Labs ECO enhances cost efficiency by incorporating data networking and transfer costs into its optimization process, providing a comprehensive view of expenses and enabling smarter, more cost-effective decisions.

Reduce Complex Decision Making



IT Administration users require simplicity, intuitive interfaces, and workflows and that is what CloudWorks for both Kubernetes and applications. Users can now be provided with real time data at the point of application deployments leveraging Arctos Labs ECO solution.

Improve Application Performance



Application users are increasingly demanding always-on and rapid application response. That implies that application components need to be deployed close to where these users are located (referred to as edge computing). Such scenarios make the analysis of application deployments more complex as the trade-off between costs and performance need to be fully understood. The CloudWorks and ECO joint solution enables such analysis in a way like how you interact with your favorite website for booking flights.

Simplify & Accelerate Operations



IT management costs continue to be on the rise driving the need for further automation. CloudWorks provides users with high levels of intelligent automation behind the scenes, which is further enhanced by adding Arctos Labs ECO real-time data. This drives efficiency, speed of execution, and time to value. Users can focus on their applications and let CloudWorks do the operational heavy lifting.

Multi-Cloud Deployments



The amount of available locations and providers continues to grow, leaving users with the decision of choice. CloudWorks enables an integrated view of all your choices, ECO helps You analyze which is best for your application deployment across hundreds of options.



**TALK TO US TO EXPLORE WHAT WE CAN
JOINTLY DO FOR YOUR EDGE INFRASTRUCTURE
AND APPLICATIONS!**

