



WEBSCALE

ROI STUDY

# Smart Decisions with CloudFlow

## AI/ML-driven Distributed Application Deployment and Cloud Cost Control

Traditional hosting structures have predominantly centralized models, from the ancient on-premises setups to modern cloud solutions. CloudFlow not only decentralizes application hosting but also integrates smart decision-making through AI/ML tooling. Let's dive into how this state-of-the-art platform is reshaping application distribution and redefining cloud cost controls.



### Why Rethink the Traditional Model?

Centralized application hosting models, while familiar, often fail to adapt to user needs quickly. Furthermore, they can become cost-inefficient, especially when it involves "always on" centralized hosting. But what if there was a smarter way to deploy applications?



### Decentralizing with Intelligence

The ideal is clear: applications should be as close as possible to the end-users, ensuring optimal performance. But decentralizing the whole application infrastructure often raises concerns about complex operations, spiraling costs, and deployment challenges. CloudFlow, however, disrupts these concerns. How? With its AI/ML-driven decision-making capabilities.

With CloudFlow, the benefits are threefold:



#### User Experience Enhancement

The system leverages AI algorithms to distribute applications, ensuring users everywhere get unparalleled performance.



Accelerates application performance by **35%** by intelligently delivering containers closer to end-users.



#### Simplified Operations

The intelligent automation feels like you're working with a centralized application. No added complexity, even with a globally distributed footprint.



Reduces Kubernetes operations by **40%** by automating critical cluster management tasks and optimizing engineering overhead.



#### Astute Cloud Cost Control

By utilizing AI/ML-driven automation, CloudFlow ensures applications run precisely where and when they're needed, preventing unnecessary expenses.



Cuts cloud expenses by up to **50%** by leveraging AI-driven cluster and pod autoscaling, location optimization, and cost-aware workload scheduling.



## Smart Cost Control in Action

Traditionally, cloud expenses rise with increased decentralization. The rationale? More locations equate to more costs. But CloudFlow turns this model on its head. The platform's AI/ML tooling ensures applications only run in locations when there's a demand, thus optimizing costs. Instead of having applications running continuously in numerous locations, CloudFlow's Adaptive Edge Engine (AEE) makes real-time decisions, deploying or retracting applications based on traffic, latency, and other crucial parameters.

For instance, in a 24-hour cycle, traffic demands can vary wildly. Using traditional methods, hosting resources remain stagnant regardless of demand fluctuations. With CloudFlow, these resources are dynamic. The AEE, with its continuous monitoring, can detect dips or surges in traffic and adjust the hosting resources accordingly. This not only ensures consistent performance but also results in significant cost savings.



## Real-world Test: CloudFlow's AI/ML in Action



To understand this better, let's revisit our [CloudFlow case study](#), but this time, focusing on its smart AI/ML tooling:

We started with the deployment of a microservices application on CloudFlow. The immediate observation? The deployment felt like it was to a single cloud location. But behind the scenes, CloudFlow's AI/ML algorithms were already at work, making real-time decisions about the best locations for deployment based on anticipated user access points.

While deploying the microservices application, transparent to operations teams and end users, in just a few minutes, CloudFlow takes care of:



Setting the networking (DNS, Anycast, SSL Management, DDoS Scrubbing, etc) to route traffic to all these locations and sends traffic to the best available location automatically



Deploying the Nginx container to all these locations and each starts serving traffic





Deploying the Fluent D container to all these locations and each starts sending logs to the central collation point (for e.g., New Relic)

Using New Relic's synthetic monitoring, traffic was generated from various global locations. As traffic patterns changed, CloudFlow's AEE made intelligent decisions on deployment, adjusting application presence based on demand. When North American traffic dipped during off-peak hours, the AEE reduced resources there, ensuring cost-efficiency. Conversely, when a traffic surge was detected, CloudFlow ramped up resources in the affected region within minutes.

### Automatic optimization


Let Webscale CloudFlow choose the best locations for your application.









Enabled 

















During the deploy period, when all locations across the globe were generating traffic, the CloudFlow's AEE configured the deployment footprint of this application to run in the following locations:


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 Lumen Chicago ...   Lumen Hong Ko...   Lumen Los Ang...   Lumen New Yor... 

 Lumen Paris, Fr...   Lumen Rio de J...   Lumen Seattle ...   Lumen Singapore 

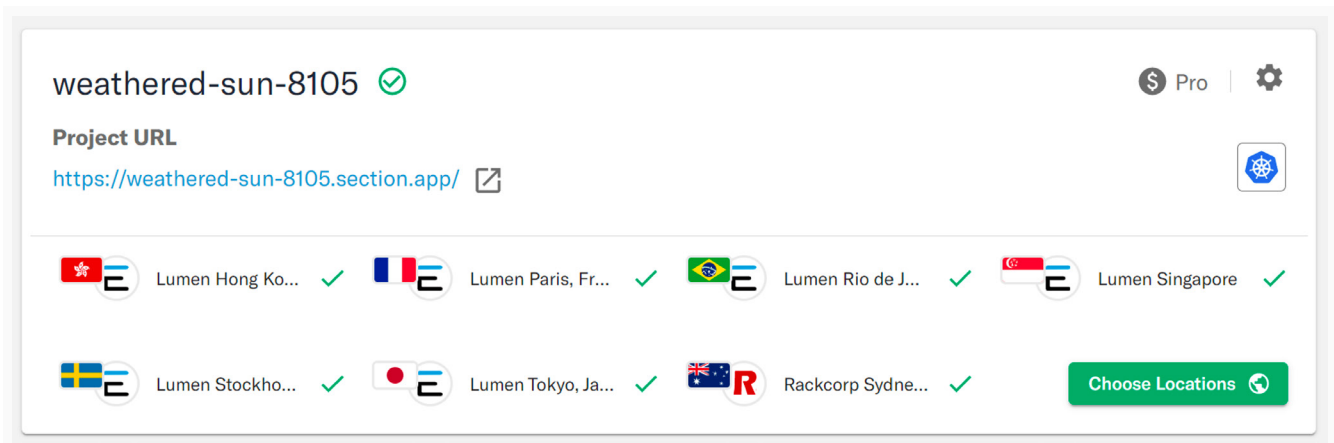
 Lumen Stockho...   Lumen Tokyo, Ja...   Rackcorp Sydne... 

[Choose Locations](#) 

And as we expect, user experience all over the globe is compelling.



But real Internet application traffic is dynamic so our hosting resources should not be stagnant. When test traffic dipped from North America, in response, the AEE decided the following locations made sense, reconfiguring the deployment footprint of this application in 10 minutes to run in the following locations:



Note, the optimum application performance in the absence of any traffic from North America.



When the test traffic was increased from North America and at the same time, traffic from Europe was cut off, in 10 minutes, the AEE shifted the application around, bringing it up in North America and removing the unneeded locations in Europe.

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All this happens constantly, automatically, and transparently to the operations teams and the end users. And, most importantly, **no requests were dropped** by the distributed hosting footprint during this automated adaptation of the network footprint.





## The CloudFlow Cost Advantage

Central to CloudFlow's appeal is its profound impact on cloud cost control. Traditional models would have costs skyrocketing with such dynamic shifts, but CloudFlow's smart decision-making ensures that you pay only for what you use, resulting in a **reduction of up to 50% in cloud costs**. No wasted resources, no unnecessary expenses. In a world where every dollar counts, CloudFlow's AI/ML-driven auto-optimization capability can be a game-changer for businesses.



## The Seamless Operations Experience

From an operational perspective, CloudFlow's intelligent automation is a dream. Despite the complexity of managing a distributed application infrastructure, operations feel as simple as handling a single centralized system translating into **40% less K8s operations**. All the logs continue to stream to one place, and teams can interact with any delivery box anytime.



## Wrapping Up

CloudFlow isn't just a platform; it's a paradigm shift. By harnessing the power of AI/ML for intelligent decision-making, it ensures optimal application delivery, simplified operations, and unprecedented cloud cost control. As the demands for ultra low-latency user experience increases, CloudFlow is the smart choice for forward-thinking businesses.

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CloudFlow case study

