



# Webapper, web applications in the cloud.

Global software services firm uses Adobe ColdFusion to maximize performance of auto racing sites hosted in a scalable Amazon Cloud infrastructure.



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*Patrick Quinn, co-founder and chief technology officer, Webapper*



## SOLUTION

Adobe ColdFusion

## IN PARTNERSHIP WITH



## RESULTS



### CLOUD ELASTICITY

Achieved top capacity scalability in customized, self-monitoring, and auto-scaling cloud infrastructure



### RAPID DEVELOPMENT

Small team readied and deployed high-traffic properties to the cloud in one week



### PEAK PERFORMANCE

Analyzed, tuned, and enhanced performance by combining ColdFusion and AWS strengths



### PINPOINT REPORTING

Provided data to Amazon engineers for pre-warming of redundant load balancers

## Webapper

Established in 2001

Employees: 8

Fort Collins, Colorado

[www.webapper.com](http://www.webapper.com)

RACERSITES

[www.racersites.com](http://www.racersites.com)

## CHALLENGES

- Adopt elastic computing environment for high-performance web applications
- Align with customer needs for speed, reliability, and control
- Adapt business model from professional services to include cloud hosting customization



## Maximizing web application investments

Webapper is a global web application consultancy with a top-tier team of application engineers that has developed and tuned some of the world's largest web applications. Founded in 2001, this specialized group continues to provide best-of-breed technology and performance engineering services to customers looking to maximize their investments in Adobe ColdFusion as a web application platform.

Working exclusively on the Adobe ColdFusion platform, the firm has built and optimized thousands of high-traffic web applications for organizations around the world. The ability to combine rapid development and deployment strengths with the ability to gather detailed metrics to analyze, troubleshoot, and tune systems enables Webapper to deliver highly specialized ColdFusion solutions.

"Adobe ColdFusion has been a compelling platform for nearly two decades," says Patrick Quinn, co-founder and chief technology officer at Webapper. "Now, with the ability to easily integrate ColdFusion applications into customized cloud infrastructures, the value proposition is even stronger."

## Peak performance at peak times

Since 2009, Webapper has been working with RACERSITES—a leading design, development, and content management firm for top motor sports brands—to collaborate on the web sites that deliver auto racing content to fans. RACERSITES has also standardized on the ColdFusion platform to build and deliver high-performance web applications, creating content that keeps hundreds of thousands of racing enthusiasts informed and engaged throughout the year.

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*Rex Aglibot, senior performance engineer, Webapper*

Memorial Day weekend is arguably the biggest race weekend of the entire year featuring the Monaco Grand Prix (Formula 1), the Coca-Cola 600 (NASCAR), and the Indianapolis 500 (IndyCar). The associated websites hosted by RACERSITES have always been successful, dynamic ColdFusion web applications. But the ever-growing popularity of these events has placed increasingly higher demands on its servers over the years. A challenge for the developers was that, as race days approach each year, fan excitement spikes to levels that strain system capacity. As Webapper and RACERSITES began working on a growth plan to handle heavy traffic—they investigated the idea of moving their suite of sites to a cloud hosting environment.

"In 2009, we started with some rapid-fire ColdFusion tuning work that quickly balanced and stabilized the system," says Rex Aglibot, senior performance engineer at Webapper. "That brought some much-needed relief for the 2010 peak racing season, but longer-term and more proactive efforts were in order."

For the next several years, the Webapper team continued to implement effective performance-related enhancements for these sites. Improvements were numerous—extensive data and content caching, load balancing and failover schemes, and content flattening via scheduled tasks that generate static HTML content from dynamic content. Additional improvements were readily achieved by isolating heavy-processing code from user-facing code, and by continuously analyzing and tuning bottlenecks.

Despite significant improvements, scaling the existing physical hosting infrastructure was costly and cumbersome. The 2012 peak weekend performance data revealed that servers were subjected to a nearly 40-fold increase in certain types of traffic on race days. Speed and capacity were at their limit on the sites' physical servers and infrastructure.

## Cloud hosting for scalability and control

The answer was combining the performance strength of ColdFusion with the advantages of a scalable cloud-computing infrastructure. The plan would support growth and traffic peaks as needed, while also avoiding having any single node in the cluster bog down. In just one week, the Webapper team migrated six to eight associated race properties to a customized Amazon Web Services cloud infrastructure, leveraging the inherent scalability of ColdFusion—including data migration, code changes, thread pool and memory optimizations, as well as changes to settings and configurations.

Knowing how the Amazon cloud infrastructure works relative to the strengths of ColdFusion enabled the team to rapidly implement tactics that would dynamically resize the infrastructure based on performance thresholds. "Adobe ColdFusion still shines in ease of use and rapid application development," said Aglibot. "These applications deployed in the cloud required some code changes, but the ColdFusion application framework features and extensive configurability made the changes quick and easy."

"ColdFusion has great performance metrics monitoring capabilities."

*Patrick Quinn, co-founder and chief technology officer, Webapper*

## SOLUTION AT A GLANCE

- Adobe ColdFusion

In the final week before migration, Webapper identified one remaining bottleneck on these auto racing sites—a Twitter data aggregation request that ran slowly even under light loads; a classic case of a non-scalable request. The Webapper team removed the offending code, enabling ColdFusion to process a huge number of fully optimized concurrent user requests. They also used sophisticated caching techniques in ColdFusion that resulted in sub-second response times even during high peak traffic times, culminating in flawless performance during the 2014 peak season.

The new cloud environment automatically senses increasing traffic and scales dynamically, while at the same time allowing the team to add servers manually to clusters in minutes if needed. "ColdFusion has great performance metrics monitoring capabilities," says Quinn. "Based on data from many years of racing events, we were able to deliver data to the Amazon engineers so they could implement pre-warming strategies that would anticipate and handle previously unforgiving traffic peaks on race days."

Once in the Amazon cloud, slowdowns became a thing of the past. Prior to migration, as many as four ColdFusion servers would churn to answer up to 50 requests per second. By combining extensive bottleneck analysis and tuning inside the new elastic hosting structure, the team was able to keep request levels on each server in the 10 to 20 requests-per-second range, handling large volumes of traffic with as many as eight ColdFusion servers at peak, plus an active/passive Microsoft SQL Server database cluster.

## Business expansion

Webapper is now consistently moving its customers to the Amazon cloud to help ensure ongoing peak site performance and accommodate growth. The team can cost-effectively create a virtual environment from scratch by tethering ColdFusion builds to the Amazon cloud, resulting in practically flawless implementations. "After 17 years of setting up and tuning ColdFusion, I know the development platform performs smoothly under heavy load. Memorial Day weekend features some of the most widely watched car races in the world, and the infrastructure we created handled the traffic flawlessly and with no performance degradation," says Mike Brunt, director of performance engineering services at Webapper.

Looking to the next decade, Webapper's biggest growth area will be ColdFusion deployments to the Amazon cloud, making it possible for the firm to expand its horizons beyond professional services to include cloud hosting specialization—well equipped with all the necessary tools to support a refreshed business model.

For more information

[www.adobe.com/products/coldfusion-family.html](http://www.adobe.com/products/coldfusion-family.html)



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