Shop Boss Case Study

THE CLIENT

Shop Boss is a web-based automotive shop management software that provides cost-effective solutions to improve the efficacy of businesses through managed systems. They provide customizable software to a breadth of auto repair shops in the industry, from larger franchises to smaller single-shop locations.

THE CHALLENGE

Shop Boss was receiving complaints of high latency, where customers reported 20-30 second delays when loading simple web pages. They initially engaged us to add capacity to their web application servers, which would have been difficult due to their outdated architecture.

The client had already migrated to AWS, but was running on a 3-tier application architecture and suffered from the slow and obsolete design of their current application. The framework consisted of Classic Load Balancer, paravirtual Instance Store-backed EC2-Classic instances running old versions of Amazon Linux, Apache and an end-of-life version of MySQL on RDS.

Our client had no interest in spending time or money to renovate their platform and had already extended the RDS backend, which did not address their issue.

By partnering with eCloud Managed Solutions, Shop Boss was poised to meet the increasing demands of their customers.

THE SOLUTION

When attempting to decrease latency, eCloud's priority was to increase capacity of the client's application. The project started with a review of the LB logs, looking for contributing factors that could explain the performance degradation. Load balancer metrics in CloudWatch reported an average non-peak response time of 1.4 seconds for web requests, which grew slower as requests increased during business hours. Although this indicated a capacity bottleneck, it was not sufficient granularity to identify the root cause. Since many logs had not been previously enabled, database logging to CloudWatch and Classic Load Balancer logging to S3 were authorized.

Athena was required to analyze the Load Balance logs. Queries were created to generate high-level metrics to recognize the type of requests with "backend processing latency," which was a good proxy of the end-user experience. This service allowed us to identify specific URLs that were slow to load and they were correlated to database queries in the MySQL logs in CloudWatch. On inspection, we found a poorly optimized application code that repeatedly executed queries to fetch data from the database and replaced it with a single call to the database. Despite very low latency between the EC2 instances, the round-trip of all these queries contributed to slower response times.

eCloud
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eCloud provided much lower average response times to Shop Boss' web pages and decreased latency by 85%.

Solution Diagram

ProfitBoost Web Average Response Time
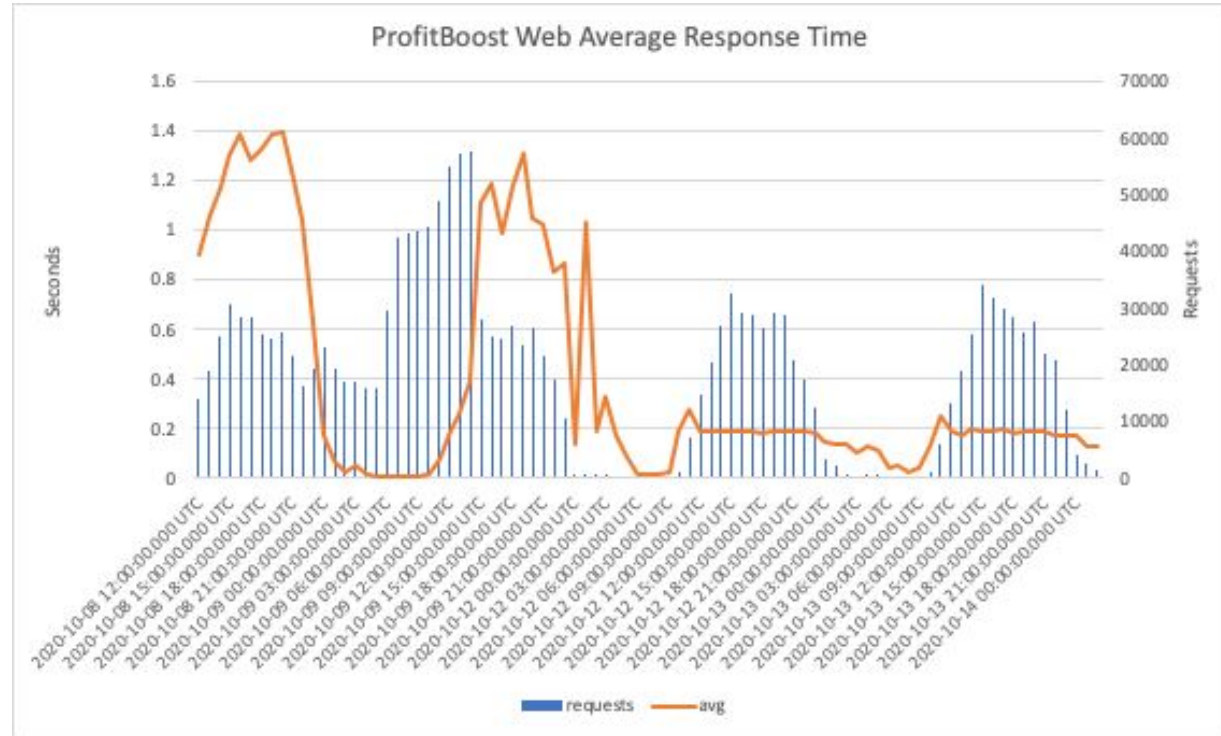
THE BENEFITS

After necessary code changes were made, latency was reduced significantly. A/B testing showed the average response times decreased by 85%, from 1.4 seconds to 0.2 seconds. The low latency application enabled Shop Boss to support operations in real-time at a cost effective rate.

eCloud Managed Solutions is working with the client to right-size capacity, implement ongoing monitoring in CloudWatch, and address architectural and security issues to support stability of the application until it is fully retired. We were able to increase Shop Boss' bandwidth with integrations that enabled an extended throughput.

85%
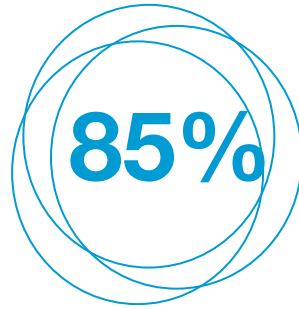
About eCloud

eCloud Managed Solutions, based in Atlanta GA, helps organizations increase security and efficiency by offering guaranteed performance and business agility while mitigating risk with cost-effective hybrid solutions. Founded in 2016, eCloud is a woman-owned business that guides organizations in evaluating, migrating and operating to better support business requirements. eCloud has helped companies remain secure, compliant, and highly available to their customers that rely on them. For more information, visit ecloudms.com

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