

# Rapid Scaling in Talent Acquisition with AWS Serverless

## Company

The customer is a provider of talent acquisition services for individuals and companies across industries and employment types, faced a significant challenge. They needed to scale their infrastructure to meet a fast-growing demand while minimizing operational costs and workforce to maintain their system.

## Business Challenge

The customer needed a solution that could handle their immediate growth requirements and lay the foundation for future scalability without incurring significant infrastructure costs. Additionally, the company needed to evolve its original infrastructure, a monolithic application relying heavily on an SQL database. The critical real-time component reliant on SQL databases must be decoupled, and maintenance costs must be reduced.

## Solution

ThorTech devised a comprehensive strategy that involved migrating to a serverless stack and transforming the architecture to embrace cloud-native technologies. The critical components of the solution included Amazon CloudFront, API Gateway, AWS Lambda, DynamoDB, Amazon S3, and Amazon SQS.

## Implementation

**1. Refactoring the Application:** ThorTech restructured the application to be compatible with AWS Lambda, enabling a more granular and cost-effective approach to component management.

**2. CloudFront and S3 Integration:** The company's application was migrated to Amazon CloudFront and AWS S3, while API Gateways were created to manage REST and WebSocket endpoints, simplifying traffic routing.

**3. Real-time Component Migration:** The resource-intensive, real-time component was transitioned to its own Lambda function and adapted to use DynamoDB as its data store, freeing it from the constraints of the SQL database.

**4. Background Task Processing:** User-triggered background tasks were shifted to an independent Lambda function. The main application forwards tasks through an SQS queue for efficient processing and scalability.



## About ThorTech

ThorTech Solutions, a New York-based software engineering and cloud consulting firm with over 22 years of experience, provides services such as application architecture, DevOps infrastructure, managed services, and staffing to help accelerate business initiatives.

Our team focuses on putting ourselves in our customers' shoes, delivering business objectives by leveraging the best technologies, and optimizing costs along the way.

To learn more, visit [www.thortech-solutions.com](http://www.thortech-solutions.com) or email us at [sales@thortech-solutions.com](mailto:sales@thortech-solutions.com)



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The serverless infrastructure boasts a React Single-Page Application (SPA) deployed on Amazon S3 and served via CloudFront. Two API Gateways manage communication with the backend, one for REST and another for WebSocket. The REST Gateway hosts the ASP.NET application on Lambda, while background processes are handled via an SQS queue with a dedicated Lambda reader. The WebSocket Gateway supports the real-time aspect of the application, with a DynamoDB-backed Lambda function providing data storage.

## Summary & Highlights

By migrating to a serverless stack and embracing cloud-native technologies, the customer experienced a significant reduction in monthly AWS expenses from efficient resource utilization. The new infrastructure enabled rapid scaling to address growing demand, ensuring a seamless user experience. The real-time component's decoupling from the SQL database enhanced the overall system's capacity, allowing it to handle increased loads effortlessly. Distribution of the SPA via CloudFront also improved responsiveness by reducing client load times and enhancing the end-user experience. Lastly, eliminating containerization on Kubernetes reduced maintenance overhead, enabling the company to focus on innovation rather than infrastructure.



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