

# Modernizing Legacy Communication Through Serverless Architecture

## Overview

Edison Research had been relying on a legacy custom protocol that required long-lasting TCP/IP connections; a setup that was expensive to run and maintain. We focused on how the company could eliminate the inefficient model by rearchitecting the entire system using serverless architecture.

## Problem

For the company, the custom protocol servers were a socket protocol that relied on TCP/IP connections. While this approach served its purpose initially, it soon became evident that running and maintaining such servers was a costly endeavor. Both infrastructure and operations costs weighed heavily on the company's resources, making it clear that a more efficient solution was needed.

To solve the problem of inefficiencies and expensive maintenance, the engineering team decided to target the cause: the archaic protocol of custom protocol servers. The solution is serverless REST API (Representational State Transfer Application Programming Interface).

## Solution

ThorTech Solutions rearchitected the system to be backed by serverless AWS services. By using Lambdas to focus on specific pain points, they were able to release a newer protocol that meets current API standards using Clojure.

The serverless stack chosen by the company consisted of several key components: an API Gateway, AWS Lambda, ECS Fargate, AWS Managed Kafka, Elasticsearch (AWS OpenSearch), and ElasticCache Redis. By leveraging a combination of AWS services, they were able to implement a serverless REST API that not only addressed the cost concerns but also improved availability and reliability.



## 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 customers' shoes, delivering business objectives by leveraging the best technologies, and optimizing costs.

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## Result

With the new approach, the company was able to release a newer protocol that is up to date with current API standards. This approach allowed the company to reduce maintenance costs and eliminate the need for custom protocol servers.

By transitioning from the custom protocol servers to the serverless REST API, the company achieved significant cost reductions across both infrastructure and operations. The pay-per-use nature of serverless computing ensured they only paid for the resources consumed, eliminating the need for long-lasting TCP/IP connections and the associated costs.

Furthermore, the serverless architecture provides increased availability for the API. With the custom protocol servers, clients experienced intermittent downtime, causing frustration and potential revenue loss. However, the new REST API built on serverless principles ensured continuous availability, leading to improved customer satisfaction and uninterrupted service.

## Conclusion

The transition from the costly custom protocol servers to a serverless REST API enabled the company to overcome inefficiencies caused by outdated protocols. By embracing serverless architecture and leveraging AWS services, such as API Gateway, Lambda, ECS Fargate, AWS Managed Kafka, Elasticsearch, and ElasticCache Redis, the company achieved significant cost reductions and ensured constant availability for their clients. This success story demonstrates the transformative power of serverless computing in optimizing operations, reducing costs, and improving customer experiences in the digital age.