Using Amazon CloudFront for delivering secure Content for a Serverless Solution for Lead Prospecting.

Executive Summary

IO Progression is a company concerned with education that seeks to cover the existing spaces on topics such as the training and professionalization of people in cutting-edge technological platforms. For this reason, IO Progression needs to capture people interested in their professional training as well as identify to companies that care about the training of their staff in strategic business areas.

The Challenge

IO progression needs a simple but flexible platform that allows it to capture the business information of decision-makers as well as the public in general interested in obtaining the services offered by IO Progression, this information is regularly obtained from events and conventions where IO Progression participates around the world offering its services so the speed and availability of the platform is crucial and should be optimal. An extra functionality in addition to the capture of information is to have a module that allows you to take a raffle where prizes are awarded to people who entered their data, this flow is carried entirely for Lambdas functions.

In addition, operational costs should be considered, which should not exceed the allocated budget without impacting factors such as security and availability since we need to store client information like names, addresses and phone numbers for this reason durability and accessibility of the information is really important.

Why AWS

AWS was selected for the range of services it offers, **AWS Lambda** being the backbone where the entire platform is supported and business rules are executed while the Amazon Aurora service is in charge for storing and retrieving the information in a fast and easy way. For content Delivery, **Amazon CloudFront** is used to cache and serve the website, doing it fast accessible and highly secure, providing https layer into S3 static website.

In addition to Lambda Functions, infrastructure provisioning is not necessary, reducing cost and paying only for what is used, on the other hand the **Amazon CloudFront** is a fast content delivery network (CDN) service that securely delivers data, videos, applications, and APIs to customers globally with low latency, high transfer speeds, all within a developer-friendly environment besides CloudFront works seamlessly with services including Amazon S3, ELB or Amazon EC2 as origins for your applications, and Lambda@Edge to run custom code closer to customers' users and to customize the user experience.

.

About Costumer

IOPROGRESSION
SPREADING KNOWLEDGE

"Earn a role-based certification that shows you are keeping pace with today's technical roles and requirements. Skill up, prove your expertise to employers and peers, and get the recognition and opportunities you've earned."

"Serverless Solution"

- Cost Reduction by paying only for calls to the Lambda functions.

- No Infrastructure Provisioning.

- The backbone of the system are the Lambda functions.

- **Amazon CloudFront** delivers the static content in a fast and efficient way and reducing latency.

- Amazon Aurora for storing the information.

- Amazon CloudFront content delivery network (CDN) is massively scaled and globally distributed.

The Solution

A serverless approach is followed for the construction of the system, the main points being:

• The solution has about 12 Lambda functions that control the business flow

• **Amazon CloudFront** is a highly-secure CDN that provides both network and application level protection.

• Query Strings are forwarding using **AWS CloudFront** making the correct request to the main site making the content secure and only accessible by CloudFront requests.

• Static website is contained in a S3 bucket and provided by **AWS CloudFront** which is in charge also for the static content cached and SSL Certificates making the connection secured.

• There is a reduction in costs by paying only for the resources used.

• Security layers are used when using services such as IAM and VPCs.

• **Amazon CloudFront** content delivery network (CDN) is massively scaled and globally distributed.
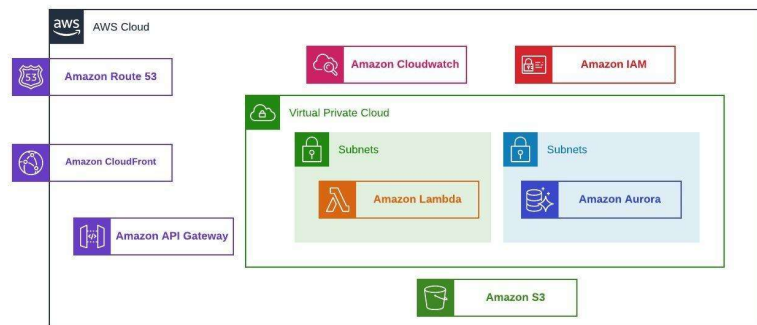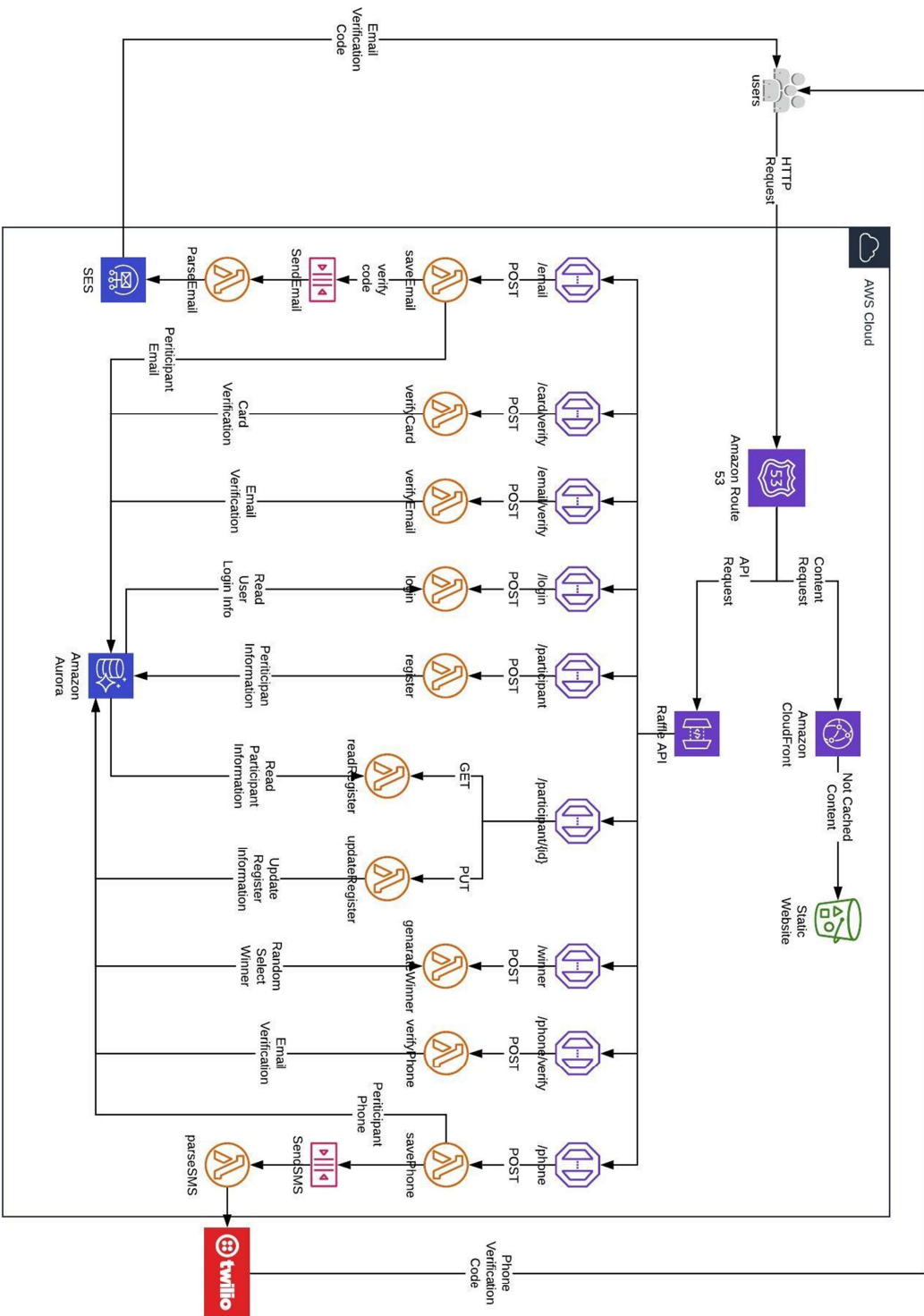

Results and Benefits

The main benefit is that there is a serverless approach where there is no need for infrastructure provisioning, in addition to other services such as Amazon Aurora**, Amazon CloudFront** and API Gateway which are managed services.
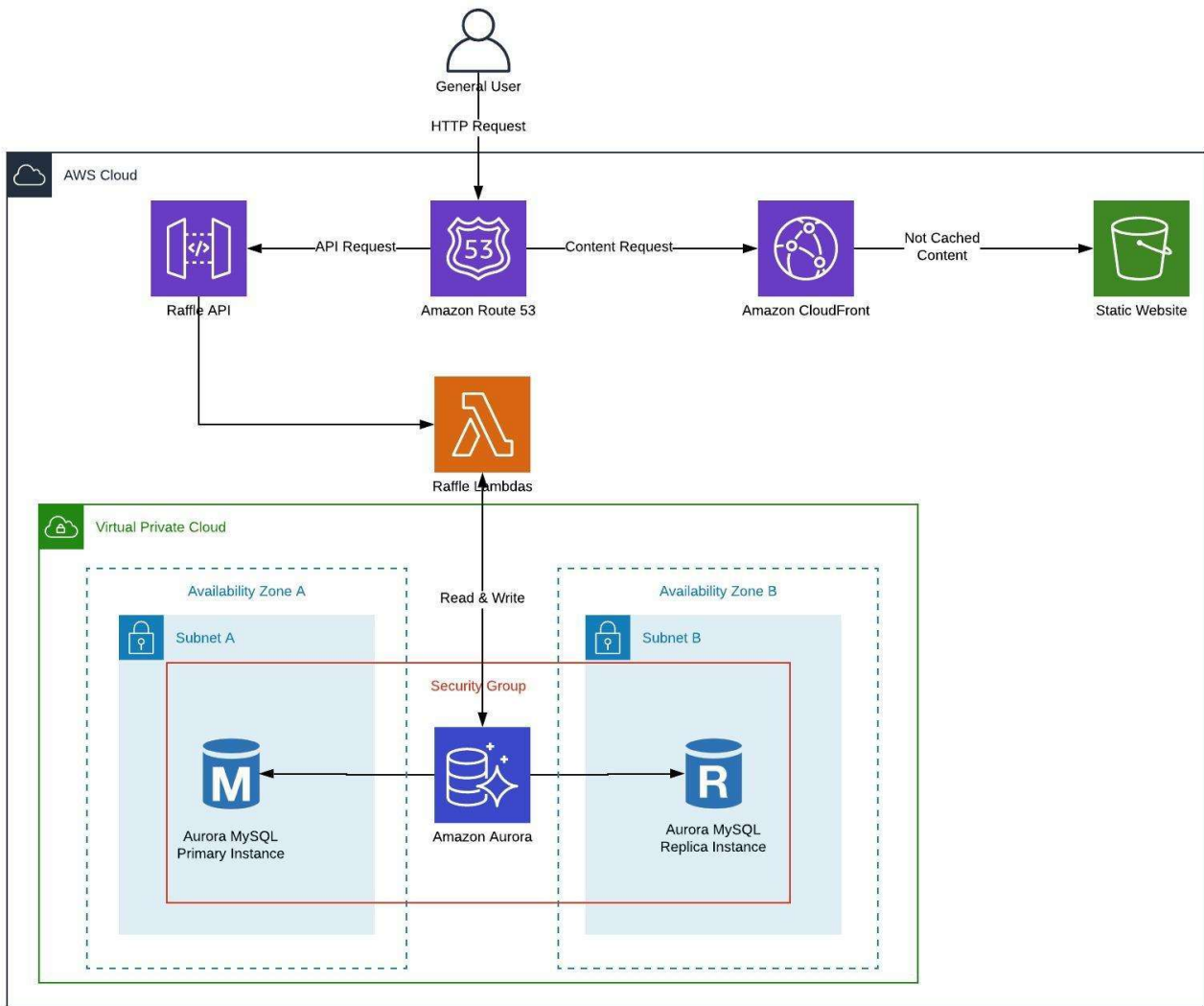
Using this approach allows us to have a robust, modern and secure system in which the entire operation resides and there is also cost reduction by paying only for what is consumed.

In addition, **Amazon CloudFront** is integrated with AWS services such as Amazon S3, Amazon EC2 and Elastic Load Balancing which let us take advantages since if we use these services as AWS origins, **you don't pay** for any data transferred between these services and CloudFront.
.

Serverless Solution Diagram

CloudFront Architecture

General User

HTTP Request

AWS Cloud

Raffle API ←—API Request—— Amazon Route 53 ——Content Request—→ Amazon CloudFront ——Not Cached Content—→ Static Website

Raffle Lambdas

Virtual Private Cloud

Availability Zone A

Read & Write

Availability Zone B

Subnet A

Subnet B

Security Group

Aurora MySQL
Primary Instance

Amazon Aurora

Aurora MySQL
Replica Instance

Next Steps

The application has been used in several national and international events hosted in the same AWS Region demonstrating the power of Lambda functions in this type of applications and CloudFront for the content delivery. The operation has been so noticeable that other organizations have even approached to ask about the solution. A next step could be to try to commercialize the application as a product.

Benefits

Superior Performance

Serverless infrastructure provides a fast, hyperscale, cloud native and secure way to have the environment of the application. It also delivers access to data and content with millisecond latency, processes thousands of requests per second, and scale to support users anywhere in the world.

LOW TCO

Save money by replacing the physical hardware with expensive licensing fees with a serverless technology on AWS. Significantly reduce TCO with AWS serverless operational automation and free up resources to focus on your business instead of managing the infrastructure.

Fully Managed

With fully managed resource provisioning, maintenance, and backups, you no longer must worry.

About IO Connect Services

IO Connect Services is a company specializing in Information Technology Consultancy Services. All our team members have one thing in common: our enthusiasm for technology and our passion for customer service excellence. We provide services in all North America, LATAM and Europe. Our headquarters are in the NYC metropolitan area and we also have offices in Guadalajara, Mexico and Madrid, Spain.