

A resilient migration: API Management from Oracle to AWS.

AWS Resilience Case Study

Executive Summary

MOBILITYADO has defined its digital transformation strategy to reach its new 2027 vision: to become a global mobility company. In this journey, one of the first steps was to update the application's fronts of each business vertical: urban, long-distance, tourism, personalized services, and public services, seeking to build standard products that include data and technology, and be replicable in any operation at the global level.

This global platform aspires to offer comprehensive and multimodal experiences, combining services operated by Mobility ADO and third-party services and disseminating the **MobilityADO** offer to third parties. As part of this vision, the API Management system is a core element of their ecosystem.

The Challenge

The biggest challenge was migrating API Management from Oracle Cloud to AWS and preparing a more resilient environment to anticipate any type of failure. The Client had chosen Oracle Cloud as its Cloud Provider as its initial business strategy. However, when the implementation of API Management was carried out on Oracle Cloud (as part of its Digital Transformation). They realized that on this cloud provider the API management implemented was causing several operational issues, such as outages exceeding SLAs. The lack of resilience, performance and HA evidenced problems in the design architecture. Additionally, the Customer noted that Oracle's Cloud Architecture did not have the same capabilities as AWS (Global Infrastructure).

Why AWS

During the POC (Proof of Concept), all the capabilities that AWS can offer were demonstrated. MobilityADO tested and validated the services that could use for implementing their API Management over AWS Cloud without losing sight of the ability to recover from failures. They learned that AWS could provide all the elements they were searching for a robust, resilient, secure, and fast API Management and continue working on their digital Transformation. MobilityADO also learned that AWS had all the services required for a Serverless approach to provide all the migration elements. This way, replacing the API Management running on Oracle Cloud with a new Serverless approach running on AWS is possible.

About Costumer



MobilityADO is a global company founded in Mexico, an expert in comprehensive mobility solutions with a presence on two continents.

Mobility ADO has more than 8,000 buses, more than 26,000 collaborators, more than 280 BRT vehicles, more than 50 brands, and more than 500 million passengers are transported annually.

"Mobility is another way to say freedom."



“AWS Serverless”

Serverless applications start with **AWS Lambda**, an event-driven compute service natively integrated with over 200 AWS services and software as a service (SaaS) applications. Serverless applications require minimal configuration and management from the user to achieve high availability

The Solution

The API Management running on Oracle Cloud had several operational and design issues reported by the users, additionally complaints about bad performance as well. IO Connect and Mobility ADO agreed to perform a Re-Factor Migration of the API Management, so IO Connect team worked on a Serverless approach, re-designing, re-architecting, retiring the current one, and replacing it with a new cloud-native application using AWS technology with high resilience.

Since AWS offers technologies for running code, managing data, integrating applications and high availability for resources, all without managing servers, the Serverless approach was a wiser decision to make.

Besides, Serverless technologies feature automatic scaling, built-in high availability, and a pay-for-use billing model to increase agility and optimize costs. These technologies also eliminate infrastructure management tasks like capacity provisioning and patching so that **MobilityADO** can focus on writing code that serves their customers.

A serverless approach was designed, presented to the client, and approved by them. The Amazon API Gateway was the core service of the API Management, and the Lambdas Functions used for integration and Business Logic.



Figure 1 - AWS Serverless Services

Best features of AWS Serverless Solution

- Reduced Cost
- Scalability
- Faster Releases
- Easier to Build
- High Availability

Results and Benefits

Deploying the solution with serverless technologies provided auto-scaling, high availability, and a pay-as-you-go model to increase agility and optimize costs. These technologies also eliminate infrastructure management tasks such as capacity provisioning and patching, while allowing you to extend the capabilities of current APIs by deploying additional AWS services such as CloudFront and Route 53 to facilitate workload recovery in case of interruptions. WAF as part of security and CloudWatch for monitoring.

The most notable resilient benefits in this implementation:

Quick Releases

Eliminate operational overhead so MobilityADO teams can release quickly, and get feedback

Scalability

With technologies that automatically scale from zero to peak demands, MobilityADO can adapt to customer needs faster.

Easier to Build

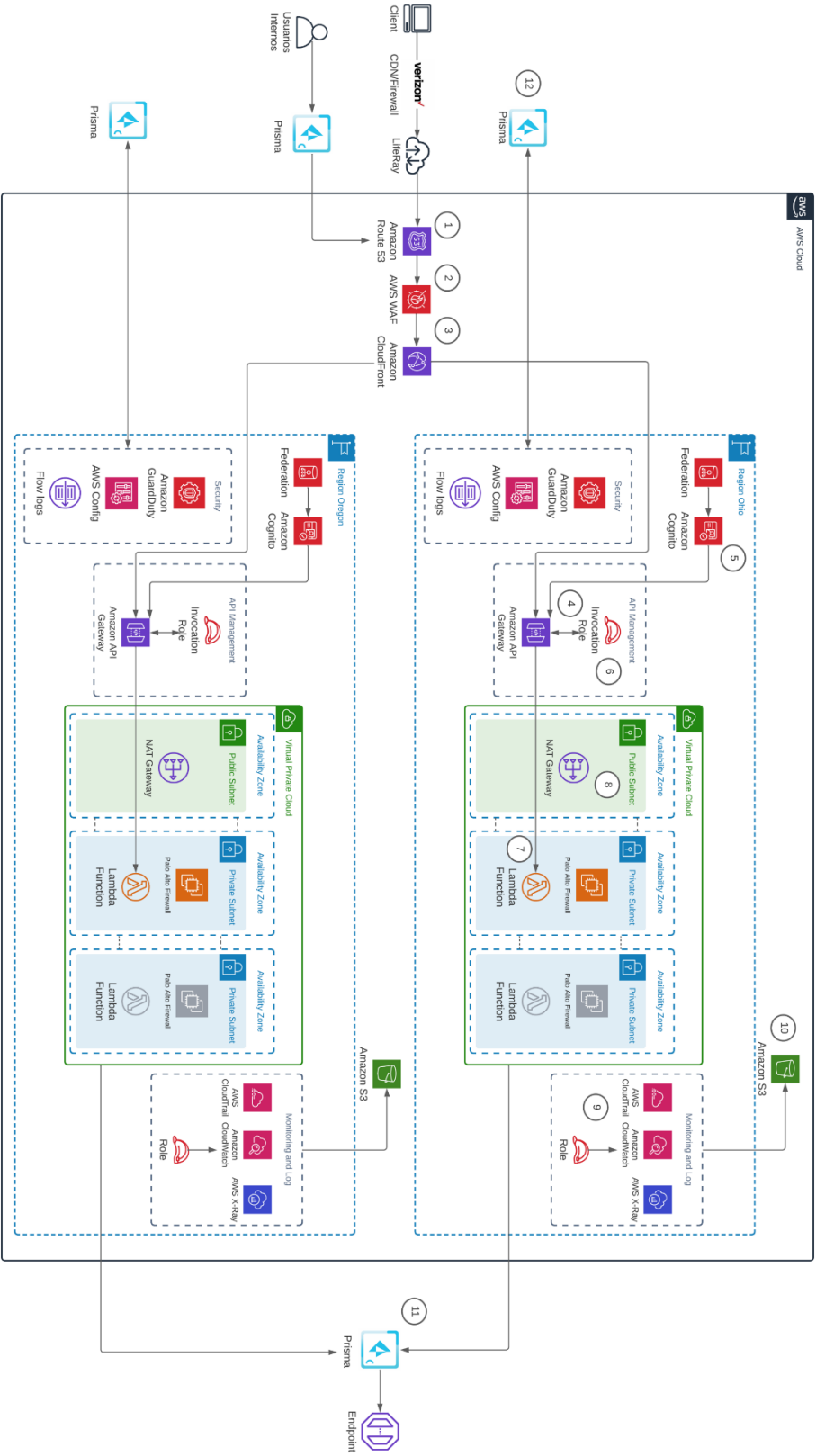
Serverless applications have built-in service integrations, so MobilityADO can focus on building their applications instead of configuring it

Lower Costs

With a pay-for-value billing model, resource utilization is automatically optimized



MobilityADO API Management Migration Solution Diagram



Next Steps

For **MobilityADO**, this was their first project on AWS cloud. They monitored and measured the results as well as the user's response. After the revision, the client considered the project a successful resilient migration. Due to the success of the implementation, the client is considering migrating to AWS other workloads and services like databases and other lines of business that they need to be able in case of any disruption in their currently environment.

Resilient Performance

This Serverless approach provides a fast, resilient, and high availability environment for the application.

LOW TCO

Save money by replacing physical hardware with expensive license fees, with AWS you pay for what you use.

Fully Managed

With fully managed resource provisioning, maintenance, and backup, deployments are more efficient.

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 NYC metropolitan area, and we also have offices in Guadalajara, Mexico and Madrid, Spain.

