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Biometric solution migrated and redesign on cloud

Reinventing the core
identification and
authentication service
for an important Bank



Customer Challenge

Since 2018, Banco Macro has been committed to deepening its digital transformation, allied with technological giants such as Globant to relaunch its service channels. The predominant architecture owned by the client is based on on-premise solutions and is in the process of migrating its applications to cloud processing to solve resource scalability problems.

Globant worked on a project to migrate one of the key identification and authorization functionalities of its clients digitally. Banco Macro needed to create a platform for the biometric authentication used in its applications to make this recognition easier in order to speed up its processes and reduce possible identity fraud that used to occur.

Some applications had this functionality built in with limitations at the level of architecture, scalability, and integration with external identity validation solutions. Changing these external services or including custom logic was complicated and expensive, so the client decided to execute a project to migrate the existing components and data associated with the identity of its users, deployed on a microservices-oriented cloud platform that allows compliance with demand requirements, and establish a biometrics solution that provides this service for use in various applications.



Proposed solution

The current solution was deployed on their on-premise servers, running under containers on a Docker Compose platform. This platform had major limitations in relation to running on several nodes in a cluster, which limited its scalability and reliability for high-demand scenarios.

At the migration strategy level, I changed the platform from Docker Compose to AWS EKS using the infrastructure as code with AWS Cloudformation, where a process of dockerization of the current solution and development of new microservices was carried out to get the most out of the cloud and to comply with the integration requirements of third-party biometric services in a secure manner. All container images were automated in AWS ECR using a continuous integration and deployment (CICD) practice for deployment within the AWS EKS cluster. In addition to this, the AWS monitoring ecosystem such as CloudWatch was used for all cluster metrics, alerts, dashboards, and thresholds. All information was encrypted with AWS KMS and secrets were managed through AWS Secrets Manager

At the data level, an extraction, transformation and loading process was implemented, read from Macro's AWS S3 to be migrated to the Biometric system of the external company in charge of providing this service.

Results and benefits

One of the main improvements that the customer realized from the change was the speed of deployment. The infrastructure change plus a solution architecture change using AWS platform or managed services dramatically sped up implementation times - from days to hours to deploy each change in the functionalities of the biometrics platform.

The implementation minimized many errors caused by manual management of environments and deployments. This topic freed up time to add more effort to the project and speed up deployment times and impact. 1 in 3 deployments had errors caused by manual tasks, permissions, or misconfiguration of the application deployment environment. Currently 1 in 10 deployments have environment-dependent errors and the metric continues to grow.

Other points of improvement is the ease of scalability without resource limitations. In the on-premise mode, even using a hypervisor, a lot of time is spent measuring the resources assigned to each application and in each environment (development, test, production) given the limited amount of resources and the costly allocation of more physical resources to the infrastructure (disk, memory, CPU).

About Globant

We are a digitally native company that helps organizations reinvent themselves and unleash their potential. We are the place where innovation, design and engineering meet scale.

We are more than 27,000 Globers present in 25 countries in 5 continents working for companies like Google, Electronic Arts and Santander, among others.

- We were named a Worldwide Leader in CX Improvement Services by IDC MarketScape report.
- We were also featured as a business case study at Harvard, MIT, and Stanford.
- We are a member of The Green Software Foundation (GSF) and the Cybersecurity Tech Accord.

For more information, visit www.globant.com

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