

# mimacom creates new infrastructure for the BBVA cyber security platform based on Apache Kafka and Elastic Stack

## PROJECT DETAILS

**Industry:** banking

**Users:** BBVA employees and customers

**Team:**

mimacom: consultants specializing in data analysis and real time

BBVA: technical teams

**Development period:**

November 2019 - February 2020

## PRODUCTS/TECHNOLOGIES

- Ansible, Apache NIFI, AWS
- EC2, Elastic Stack, Helm
- Kafka, KMS, Kubernetes, Syslog

In recent years, the digital transformation of banks has been driven in particular by the growing expectations of their customers. To satisfy its own customers' requirements for digital services and offer an outstanding user experience, BBVA therefore decided to team up with mimacom to expand its existing IT infrastructure. The focus of this activity was on BBVA's cyber security platform.



**Background** → BBVA (Banco Bilbao Vizcaya Argentaria) is a global financial services group that was founded in 1857 and holds a strong position of leadership in the Spanish market. Its international investment, transactions, and capital markets business are all focused on the needs of its customers. To meet new, digitally-oriented expectations, BBVA has therefore increasingly been offering digital services in recent years.



*mimacom enabled the establishment, expansion, and optimization of best practices for the technological infrastructure of the BBVA's central cyber security platform.*

**Diego Martínez**, senior manager, BBVA Corporate Security Solutions



The new platform is contributing to a significant improvement in BBVA's technical infrastructure.

**The challenge** → The increase in digital offerings is mirrored by a greater need for a central platform from which all digital offerings are managed and security issues can be resolved. Owing to the growing demands for such a solution, BBVA opted to comprehensively redevelop its previous platform.

The aim: a solution that, on the one hand, allows all security-relevant aspects to be managed in the context of the service and, on the other, ensures the correct level of performance for this service.

#### **Requirement: consistent compliance and centralized management of all customer service channels**

The digital solution must additionally ensure that the applicable regulatory measures in the banking sector are upheld. This includes ensuring that the data processed remain confidential and the regulations for each geographical area are complied with.

BBVA also offers its customers various different channels and options for the use of its services. In technical terms this means that processes are required that can channel, standardize, and centralize all cyber security data on a single platform – across all geographical regions.

#### **The technical basis of the new solution**

BBVA's previous cyber security platform was based on the Elastic Stack and Kafka. Depending on the geographical origin of the data to be processed, different technologies were used, and multiple productive environments were generated with their own configurations for each instance.

#### **Concept for an innovative platform**

Because of the increasing data volume, however, it became necessary to develop a number of improvement and optimization tasks.

On the one hand, tools had to be available that would enable the platform to be replicated in new regions, automatically and with a minimum of interventions. It also had to be possible for each component to be updated without interrupting the service offered.

On the other, it was necessary to optimize the performance of the platform, with a focus on improving data storage and processing.

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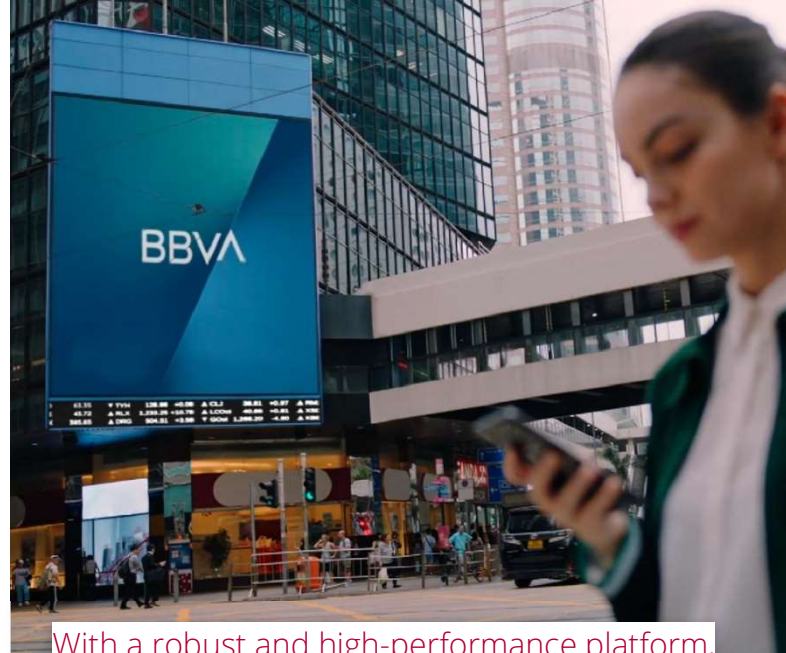
*Collaboration with mimacom is based on trust and professionalism. We have experienced these values in ongoing processes, and they find expression in both high levels of flexibility and our work with the personnel, who generate a huge amount of value added, in both technical and human terms.*

**Diego Martínez**, senior manager, BBVA Corporate Security Solutions

### The solution, developed jointly with BBVA

**Solution** → For this concept, mimacom joined forces with BBVA's technical teams. The aim: to offer consultancy services to BBVA while these tasks are being carried out and provide support in all tasks arising until the new platform goes live.

- The first step consisted in automating all tasks connected with the upgrade, maintenance, and creation of new platforms. For this the teams chose a combination of Ansible and Helm Charts plus local environments to replicate the productive environments and test the changes. Additionally, mimacom concentrated on finding a solution that would enable these upgrades to be made without downtime, taking the opportunity that then presented itself to make the entire communication secure.
- Next, mimacom analyzed the data entered to optimize the use of the different clusters. In a few cases, the data volume handled by a cluster could be almost tripled without new nodes being added. To perform this optimization, both the distribution of the indices in Elasticsearch and the treatment of the indices during the indexing cycles were improved.
- The final step consisted in defining a roadmap with various lines of action that would be determined by the growth of the platform and the needs of the individual production environments. The intention was thus to enable an optimized environment, despite the growth in the data volume processed.



With a robust and high-performance platform, BBVA can master new challenges.

**Benefits** → In conclusion, it can be said that BBVA now has a robust and high-performance platform that is capable of taking on the entire anticipated data volume. It also now has the necessary tools and processes to set up new platforms in other regions and to maintain and update the existing ones.

A further benefit has been that, thanks to the updating and improvements made to the data quality, it has been possible to implement machine-learning tasks. This allows anomalies to be detected and preventive measures to be taken in the event of potential errors.

With the new infrastructure of its cyber security platform, BBVA will therefore be able in future to meet both the growing customer expectations and its compliance obligations.

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