



As a fintech leader in the region, Pomelo's vision was unique. The company's founders wanted to craft an end-to-end solution that would allow customers to build their own physical or virtual payments card. Historically, this could be a difficult process, and the company wanted to make it easier and faster for customers. They also wanted to provide customers with the ability to establish digital accounts with support for both physical and virtual transactions. Finally, to provide a truly resilient solution, Pomelo needed a cloud cryptography provider that could offer high throughput, low latency, and multi-site redundancy. They would find Futurex's VirtuCrypt cloud to be an ideal solution in each respect.

AT A GLANCE:

- ▶ Headquartered in Argentina
- ▶ Services reach 450 million people
- ▶ Offers cards and digital accounts
- ▶ Over 300 employees
- ▶ Founded in 2021

On the cryptographic side, issuing payment cards involves using hardware security modules (HSMs). Futurex HSMs can be deployed in the VirtuCrypt cloud to perform encryption key management and cryptographic operations. Pomelo's Futurex cloud payment HSMs play a crucial role in encrypting sensitive payment data, as well as in generating, storing, and managing the cryptographic keys used for card authentication and transaction security.

Pomelo fintech revolution: Secure financial products in the cloud with **Futurex**

A case study of Pomelo

Pomelo is an innovative Latin American financial technology (fintech) company with a broad global customer base. This rapidly growing startup wanted to implement a robust cloud-based payment infrastructure in the region.

To run their financial product applications in the cloud, Pomelo turned to Amazon Web Services (AWS) for a cloud cryptography provider to help them deliver cutting-edge financial services through the AWS Marketplace. They found Futurex.

This article provides an overview and explores how Pomelo implemented Futurex cloud services to achieve its cloud migration goals and expand its business across the Latin America and Caribbean (LAC) region.

Issuing and acquiring in the cloud

Payment card issuing was a core use case that Pomelo wanted to deploy in the cloud. And not just any kind of issuing: they needed to issue cards in a wide variety of formats, including physical, virtual, prepaid, credit or debit, and even to support cryptocurrency. That way, their customers could choose the format that best suited their needs.





Pomelo needed their cloud HSM solution to process financial transactions as well. To do so, the VirtuCrypt cloud HSM establishes a secure connection to communicate with external systems, such as payment networks or banks, to validate transactions. This process ensures that the payment issuer has the necessary funds and authorization to process the transaction.

Regulatory compliance

"Futurex's solutions make it easy for Pomelo to meet the demanding cryptography requirements mandated by the PCI-DSS regulation, the industry-defined security standard for payment media," said Roberto Rubiano, Cybersecurity TL at Pomelo. "Pomelo relies on the strength of VirtuCrypt solutions to securely host all information covered by this standard, applying advanced-level algorithms throughout the entire lifecycle, thus achieving compliance required by brands, customers, and regulators."

"The experience of Futurex's support team has helped Pomelo develop complex functionalities in record time."

Additionally, Futurex's continued and renewed commitment to the FIPS 140-2 standard and the same PCI-DSS regulation contribute to maintaining an acceptable risk level, as they cover the necessary controls for each of the control areas reached by these regulatory frameworks.

Multi-site redundancy

In their mission to build a new kind of payment infrastructure, Pomelo knew it would need to ensure high availability, disaster recovery, and resilience in the face of potential failures or disruptions. Its cryptographic solution would therefore need to offer multi-site redundancy.

Card issuers rely on their cryptographic infrastructure for critical operations such as payment card issuance, transaction processing, and key management. By implementing multi-site redundancy through Futurex's VirtuCrypt, Pomelo is able to minimize the impact of any potential site-specific failures, like power outages, natural disasters, or disruptions to the network. If one site becomes unavailable, operations can seamlessly transition to another site. This ensures business continuity and uninterrupted cryptographic services.

Pomelo had easy access to multi-site redundancy thanks to VirtuCrypt's global data center presence. VirtuCrypt maintains multiple data centers in every geographic region in the world to help deliver redundancy, low latency, high availability, and regional compliance to all customers.

Pomelo cryptographic use cases

Transaction acquiring

The process whereby merchants capture cardholder data, encrypt it, and transmit it through a series of payment gateways and processors, which convey it to the bank which issued the card. The bank validates the data and notifies the merchant as to whether or not the transaction is approved.

- ▶ CVV generation and validation
- ▶ EMV validation
- ▶ Database encryption
- ▶ Mobile payment acceptance
- ▶ PIN translation and verification
- ▶ Point-to-point encryption (P2PE)

Card and mobile issuing

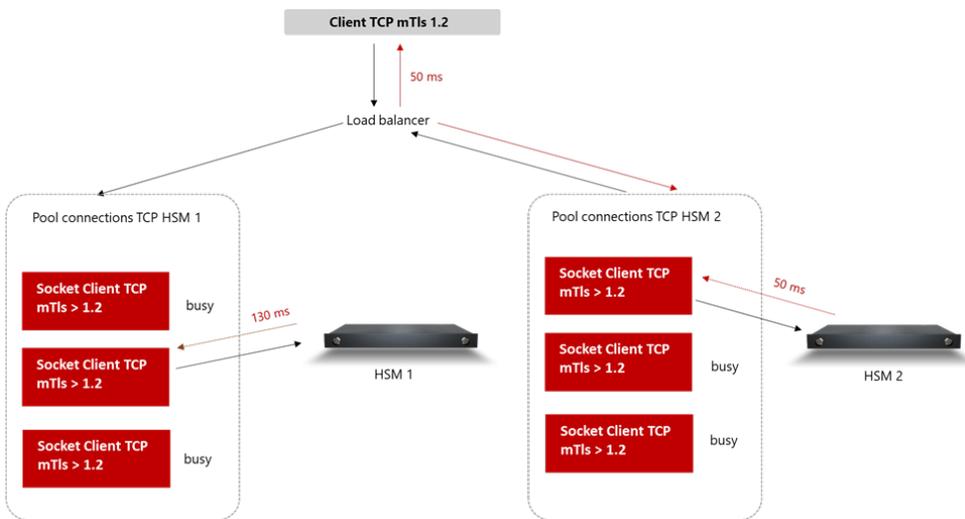
The process whereby financial institutions such as banks and card companies generate cardholder and account data for customers. It entails the secure management of encryption key lifecycles and mobile tokens.

- ▶ EMV key generation & derivation
- ▶ PIN and offset generation
- ▶ Online and mobile PIN management
- ▶ Mobile token issuance (including host card emulation tokens)



Redundancy is key

“At Pomelo, having a service interruption is one of our major concerns,” said Victor Rigacci, Staff DevOps Engineer at Pomelo. “Thanks to Futurex’s multisite, we have built great confidence in our daily encryption operations. “Each package to be encrypted is replicated instantly to all available Futurex sites, always choosing the message with the lowest latency,” Rigacci explained. “This way, we absorb any stress that networking or device incidents may have, ensuring a drastic reduction in errors or high latencies, providing our clients and their users with a consistently uninterrupted experience.”



Speed and security

Pomelo values speed as the key to ensuring the best experience for customers and to being pioneers who offer innovative products to the market. Franco Pinto, Staff Software Engineer from the issuance team, said, “The support team’s experience at Futurex has helped Pomelo develop complex features in record time, providing documentation and tools to meet the EMV standard.”

Regarding the continued focus on security, Pinto added, “To ensure the highest levels of security while working with multiple clients, we have a segregated cryptographic key architecture. Thanks to VirtuCrypt’s solutions, we generate, transport, and use these keys intuitively, allowing us to offer a comprehensive issuance product with key functionalities such as wallet migration.”

Growing the business

Since deploying Futurex’s cloud solutions through VirtuCrypt, Pomelo has grown its solution suite to offer card issuance, transaction processing, digital account creation, identity verification, and more. Pomelo’s inventive services are backed up by a strong, world-class cloud cryptographic infrastructure that delivers security, functionality, ease of use, and redundancy.

We’re excited to see how Pomelo uses its cryptographic infrastructure to drive positive change in the LAC payments industry.



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