

Global Card Issuance and Transaction Processing

A leading global developer of innovative electronic payment solutions required a standards-compliant way to issue both prepaid debit and EMV cards as well as process payment transactions using their customizable, multi-currency payment platform. The Futurex Solutions Architect team assisted the company in developing a comprehensive solution to fit their specific needs. With Futurex technology, the global payment solutions company successfully fulfilled their organizational requirements for card issuance and transaction processing within a scalable, fully redundant, and remotely configurable infrastructure.

The market for prepaid cards has grown tremendously over the past five years, and it shows no sign of slowing down. Between 2009 and 2012, prepaid cards grew at a faster rate than another other kind of card payments, including credit and debit.¹ This growth is often attributed to expanded government regulation as well as increased consumer adoption of card-based payment methods, particularly among unbanked individuals and those with little to no credit history.

This tremendous opportunity and growth is accompanied by a marked increase in responsibility. Forward-thinking payment companies understand that, in addition to the requirements for compliance with global regulatory standards, the rapid expansion of the prepaid card market also brings challenges relating to high-volume, high-availability transaction processing.

Issuing both prepaid EMV and debit cards presents unique operational challenges. Unlike typical prepaid debit or stored-value cards, EMV cards contain an integrated circuit card (ICC) chip and are secured using a Public Key Infrastructure (PKI). PKI, an asymmetric encryption system, has been used for many years to provide critical security services for online banking, secure VPN connections, and more.

When managing a global, geographically dispersed data encryption infrastructure, a number of critical factors must be addressed, including security, scalability, redundancy, and remote management capability. By leveraging the first-to-market technology of the Futurex solutions suite, one payment processor was able to exceed their organizational requirements for each one of these factors and bolster the superior reputation that they have developed with their global clients.

A gold-colored EMV chip is shown inside a circular frame. An arrow points from the chip towards the text "Europay Mastercard Visa".

**Europay
Mastercard
Visa**

What is it?
An embedded microchip that provides additional security for card validation

How does it work?
The implementation of a Public Key Infrastructure (PKI) enables authentication data to be securely encrypted within the embedded chip. During transactions, the chip's data confirms that the card is valid.

The Business Case

A respected company with a global customer base in the card-based payment industry came to Futurex with the desire to enhance their card issuance and transaction processing infrastructure by bringing their encryption tasks in-house.

This payment processor had several functional requirements, including capabilities for transaction processing, prepaid EMV and debit card issuance, and remote configuration. Most importantly, they needed this technology in an easily integrated and cost-effective package.

¹ "2013 Federal Reserve Payments Study," The Federal Reserve System. December 19, 2013.

Case Study: Global Card Issuance and Transaction Processing Using the Excrypt SSP9000

In addition to their U.S. based key management center and business offices, the payment processor required full production capabilities at sites in Canada and Europe. Management of these three sites represented a significant cost center for the company, and they needed a secure way to perform Master File Key loading, configuration, and firmware updates from a central location.

After careful consideration, the payment processor decided to standardize on the Futurex solutions suite and developed a detailed systems implementation plan with the Futurex Solutions Architect team.

The Solution

Taking the company's functional requirements and applicable regulatory standards into consideration, the Futurex Solutions Architect team crafted a complete solution using best-in-class technology: the Excrypt SSP9000 hardware security module and the Securus, the world's first purpose-built tablet capable of remotely configuring their core cryptographic infrastructure via a PKI-secured interface.

In addition to production sites in the United States and Europe, the Excrypt SSP9000 HSM was specified for a fully redundant disaster recovery facility in Canada. Structuring their transaction processing and card issuance environment in this manner gave the company the ability to easily scale as their transaction volumes expand while still taking advantage of the best cost-to-performance ratio available in the industry.

Through the Securus, the payment processor is able to manage all aspects of device configuration and key loading for HSMs in these data centers from anywhere in the world. Numerous additional security options and built-in hardware redundancy features enabled the global company to go above and beyond in their commitment to serving their customers.



The Securus is capable of performing all elements of configuration, including loading the Master File Key, from anywhere in the world via a PKI-secured Ethernet or Wi-Fi connection. International travel between the payment processor's sites represented a costly expenditure, but by implementing the Securus, they have dramatically reduced the yearly total spending of travel between sites.

The Results

By working together with the Futurex Solutions Architect team, the company established a robust, extensible solution for payment processing and card issuance that will serve them well into the future.

Additionally, by implementing the Securus to manage their Excrypt SSP9000 hardware security modules across their three data centers, the payment processor has eliminated their need for routine intercontinental flights between the U.S., Canada, and Europe, which has a direct impact on their bottom line.

The Solutions Architect team that assisted in the design and implementation of card preparation and issuance environment is a group of financial payments and data encryption industry experts with the experience and knowledge to provide product support, consultative knowledge, and technical advice to organizations worldwide.

By adopting the Excrypt SSP9000 and Securus into their payment processing infrastructure, they have developed a fully redundant, remotely configurable, enterprise-class system.



NORTH AMERICA—Global Headquarters 864 Old Boerne Road, Bulverde, Texas 78163 USA
TF 800.251.5112 P +1 830.980.9782 F +1 830.438.8782 info@futurex.com
WWW.FUTUREX.COM