RS Software

CASE STUDY

Cryptogram Server Development for an Encryption Services Firm

Industry Landscape

Market participants in the payments ecosystem have both an obligation and an industry mandate to ensure the security of payment transactions and protection of payment card data. To achieve this, organizations in this ecosystem must maintain transaction environments that feature high availability and reliability.

Business Objective

Founded in 2003, our client's credit cards prevented the use of stolen card data without changing retail systems or card holder behavior. The firm works with major card issuers, card associations, card manufacturers, transaction processing service providers and others to deliver secure financial cards and solutions to the market.

Our client engaged us to assist in the development of a card using a proprietary chip that is embedded in the magnetic stripe and creates a unique number on the magnetic stripe each time the card is used. The unique number for each transaction is authenticated by the card issuer with real time patented authentication technology.

THE TRANSFORMATIVE POWER OF ELECTRONIC PAYMENTS

Solution Overview and Value Proposition

RS engaged with the customer from the requirement analysis to the design, architecture, development, unit testing, integration testing and functional testing of their authentication server (QAS), cryptogram server (QCS) and functional modules.

The project included:

Development of QAS and QCS components including reports, dashboard, audit logs, reconciliation of encrypted files, and UI using J2EE frameworks.
Development of a cryptographic module that resides in an HSM (Hardware Security Module) to generate an array of unique numbers to be loaded into the client's Smart-Stripe and Q-Display cards. The module was implemented in C using Protect Processing Orange SDK and cross compiler.
Implementation of the host side java interface to the cryptographic module embedded in the Hardware Security Module (HSM).
Technical writing for QCS and QAS products including creation of user manual, installation guide, and support manual.

AUTHENTICATION SERVER

- Allows the end user to generate files containing unique cryptographic security codes for card data to be reconciled against input files
- Billing reports on card usage
- Dashboard, activity and audit logs
- Access control for user interface

CRYPTOGRAM SERVER

- An Enterprise application for authenticating transactions based on various rule sets
- Dashboard, transaction logs, response codes, log monitor and transaction error details
- Schedule Jobs such as import, export, purge and delete jobs from the UI, and view active jobs and job logs
- Access control

FUNCTIONALITY MODULES

- A cryptographic module that resides in an HSM to generate array of unique numbers to be loaded into the Smart-Stripe and D-Display cards

About RS Software

Since its inception in 1991, RS Software has been focused on providing e-payments solutions to its clients and has become the partner of choice for the world's leading payment brands. We have been technology partners to several leading payment organizations across multiple geographies on three continents. We preserve the quality of our solutions through our proprietary RS GEM™ (Global Execution Model) to provide a comprehensive set of services and continuing innovation within the payments domain. The RS Software CoE (Centers of Excellence) oversee the development of new practices within the company and provide the infrastructure necessary for the development of skills.

RS Software, through its tactical and strategic investments towards sourcing, knowledge retention, and skill building, has developed a team of payment professionals who are not restricted by vertical, horizontal, or geographical boundaries. Our team of subject matter experts, developers and QA professionals has the technical skills essential for any payment related solution. The team's skills are benchmarked through external certifications such as ITSQB and CSTE.

Our QA team offers customers insights into the latest trends in the process certification space and certification of standards such as ISO 9001, SEI CMMi, and TMMi. The team also provides formal process improvement consultancy through implementation of Six-Sigma and Lean/Kanban methods. These added values from RS Software not only enabled the client to meet stringent timelines but also to maintain a significant edge over competitors through the application of industry best practices.