

Omnichannel Payments Switch secured with Thales payShield 10K HSMs

How EFTLab relies on hardware security to respond to today's changing payments landscape



The Business Challenge

The payments world today is changing rapidly, driven by pressure exercised by different stakeholders including merchants, regulatory bodies, payment brands, and technology companies. These forces are rarely pointing in the same direction. Traditional financial institutions are typically conservative players, mostly reacting to changes rather than taking the lead. This can prove a risky approach by missing out on essential opportunities and finding themselves out of the game – eventually out of business.

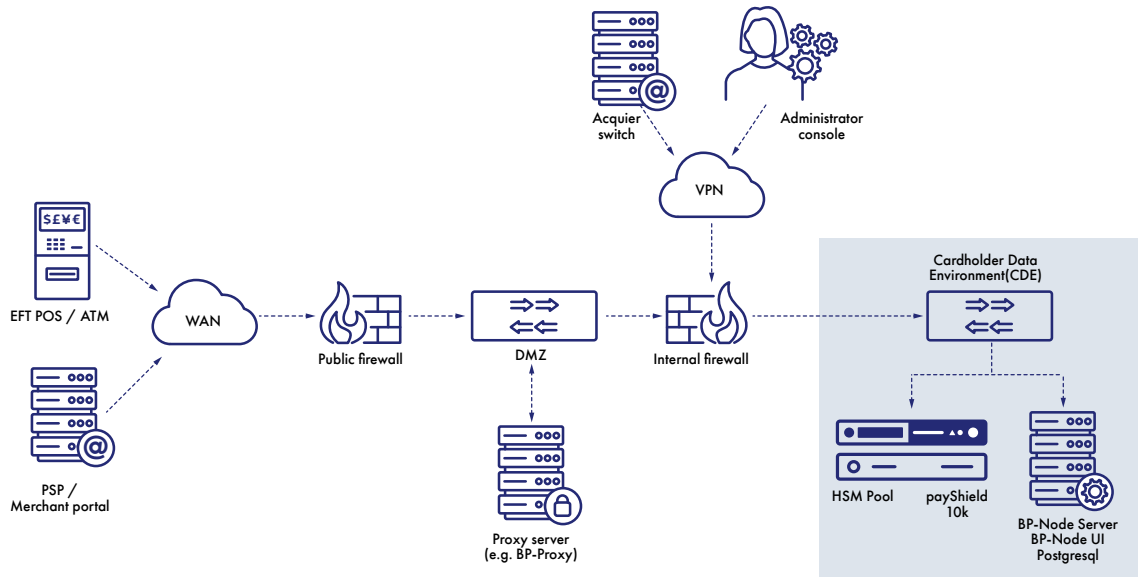
We live in a challenging and exciting era of transformations. The COVID-19 pandemic brutally accelerated the shift to an online economy. The broadband mobile networks and the penetration of smartphones prepared the infrastructure for the proliferation of new financial instruments and payment methods. The border between such well-defined areas as retail payments using traditional bank cards and interbank payments is fading - challengers are on the attack, introducing alternative payment tokens and methods, especially in the area of instant payments.

The Solution: BP-Node, a suite of payment processing products from EFTLab

BP-Node responds to the challenge of empowering its users with a general-purpose message processing infrastructure designed and built-in, following the highest security requirements, extensible to integrate all the channels their customers are setting up. The security of BP-Node relies upon its tight integration with Thales's market-leading HSM products, the payShield 10K family employing its newest features for key blocks support, tokenization, and many more.

EFTLab's first commercial product, the BP-Sim Suite, is a kit of software tools written to help to test and diagnose different components of the payment ecosystem. It creates a high volume transaction load to stress the target system using a realistic mix of transactions, running real-world cryptography including EMV, PIN, and message encryption and tokenization. This demand led EFTLab engineers to design the Enterprise Message Bus (EMB), a proprietary solution ensuring lightning-fast message delivery, being the backbone of a Service Oriented Architecture.

The EMB technology is at the core of BP-Node, the Enterprise Service Bus (ESB) for payment processing. ESB is message agnostic, dispatching virtually any messages, regardless of their structure, encoding, or content. The messages are placed on the bus and are picked up by subscribers registered for that message. The whole architecture is extremely extensible enabling new features to be added without impacting the existing ones.



BP-Node’s innovative Pipeline concept allows breaking down the processing flows to simple steps connected in a specific order to perform the required business function. The messages are passing this virtual pipe from outside in until reaching the competent decision when a response will be passed back on the same track. The steps are represented by components doing atomic actions – programs, which act on local data, being easy to be unit tested. The component may decide to pass the message on, return the message or dispatch the message to other pipelines for synchronous or asynchronous processing. JSON formatted ISO-20022 family messages provide the required extensibility, allowing superposition of different message attributes presented for processing.

Thales payShield 10K HSMs are integrated into the switch ecosystem forming a high availability virtual HSM pool through the advanced HSM Load Balancer which is registered as a service on the message bus. In its configuration, each physical HSM is represented by an HSM plugin set up according to the HSM model and configuration. The HSM plugin acts as a super-intelligent device driver, providing message flow control, parameters mapping, and message formatting. The incoming cryptographic commands are passed to the next available device using round-robin with priorities. These features guarantee the expected spread of the load and automatic failover in case of outages.

The HSM Load Balancer offers advanced features like retrieving the proper keys necessary for command execution from the BP-Node Key Store based on the target HSM identity.

Why use Thales payShield with EFTLab BP-Node?

Using Thales payShield 10K devices with EFTLab BP-Node combines the best of the two worlds: cutting edge technology, security, and compliance using the market-leading payment HSM with a PA-DSS certified high availability solution to provide uniform and always available cryptographic service for the customer infrastructure.

Key Benefits

- Robust System Orientated Architecture with built-in redundancy: always available
- Horizontally and vertically scalable: grows with the business
- Modern cross-platform technology supporting virtualization and full remote access
- Browser-based GUI for available for Linux and Windows platforms
- Compliant with highest security standards: PA-DSS certified and [ready to transition to the new PCI Secure Software Standard](#)

About Thales





The people you rely on to protect your privacy rely on Thales to protect their data. When it comes to data security, organizations are faced with an increasing number of decisive moments. Whether the moment is building an encryption strategy, moving to the cloud, or meeting compliance mandates, you can rely on Thales to secure your digital transformation.

Decisive technology for decisive moments.

About EFTLab

EFTLab offers a variety of Breakthrough Payments (BP) solutions which includes its certified PA DSS payment switching platform BP-Node which can be deployed in virtually any environment. This bundled with EFTLab’s payment testing suite BP-Sim and flexible middleware options mean clients can quickly deploy a scalable processing platform, all of which are customizable to meet the needs of each individual company.



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