



# FSS UPI SOLUTION BRIEF & HSM INTEGRATION

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## Version History

The following table displays the version history of this document:

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# INTRODUCTION

## Scope of the Document

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The scope of this document is to provide solution brief of UPI integration with Thales Hardware Security Module.

## Product Overview

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### FSS UPI - Revolutionary Real-Time Payments

FSS assists PSPs in deftly navigating a rapidly expanding digital payments industry by processing 10% of all UPI financial transactions in the nation. Along with PSPs, FSS collaborates with central regulators to create prompt payment plans across the whole nation.

Leading banks have taken use of our extensive knowledge to install FSS UPI and to introduce pertinent, cutting-edge overlay services in order to stay up with changing client needs across various customer categories. The UPI solution from FSS offers a safe Gateway to link PSPs to the main payment system and smoothly coordinate transactions between consumers of member banks and third-party services.

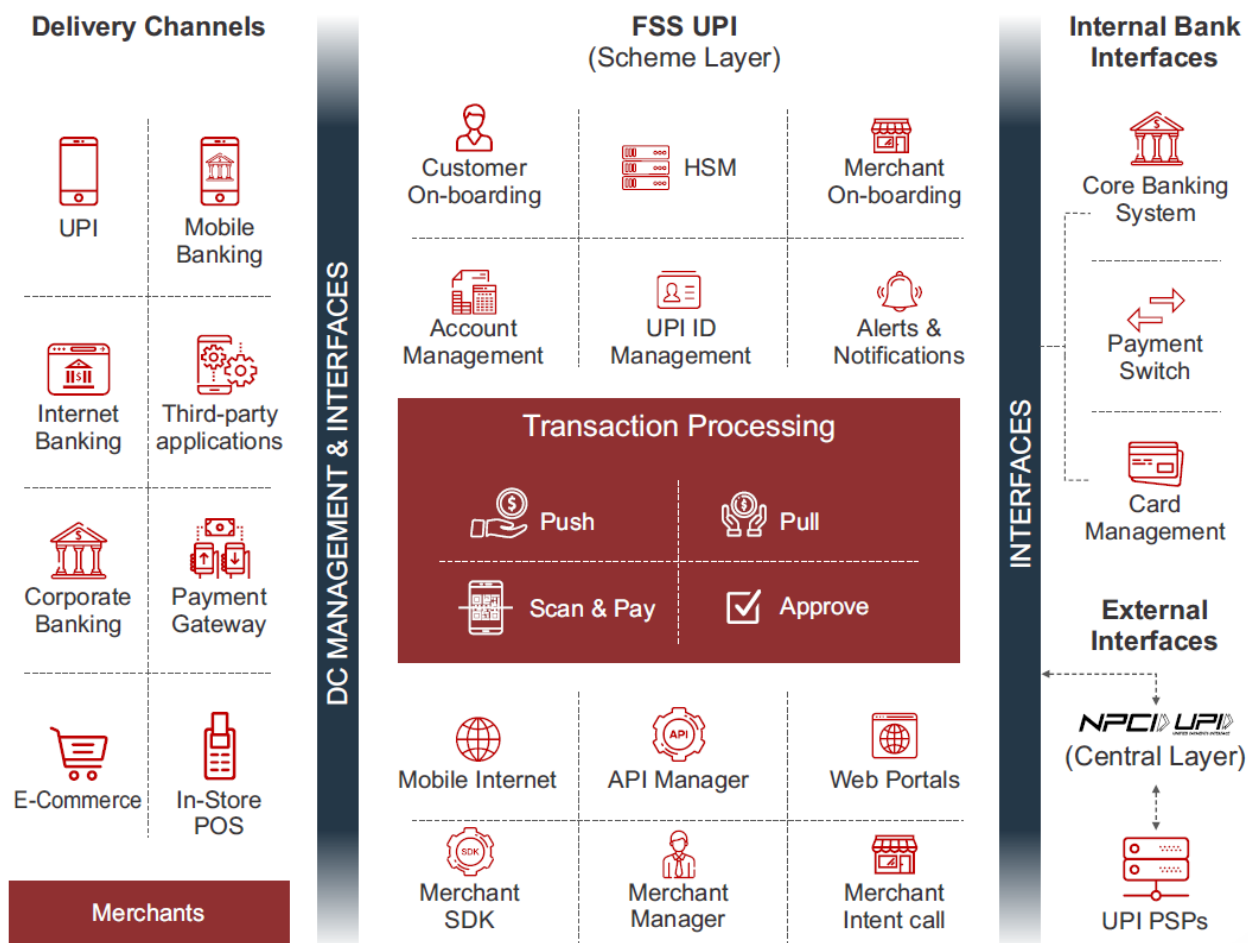
### How it Works?

UPI is an open system for inter-participant PSP transfers from bank account to account. Two layers make up the UPI Infrastructure: the Central Layer and the Scheme Layer. Addressing service systems, upholding standardised messaging flows, switching transactions, clearing, and settlement are all responsibilities of the central layer. Banks that are members of the Scheme Layer are free to publish APIs to implement cutting-edge consumer services.

PSPs use FSS UPI to facilitate both the acquiring and issuing of transactions. The flexibility of FSS UPI allows for the issuance and management of VPAs connected to bank accounts during their entire lifespan, as well as the routing of transactions to the Central Layer. Additionally, PSPs may offer more services and collect more transactions to provide end consumers with better value. FSS UPI receives and approves payment



requests coming from a variety of channels, including mobile, POS, and internet, in order to offer omni-channel support. The Central Layer will then process these requests.



In UPI product, HSM(Hardware Security Module) is essential and integral part of the transaction and required for PIN creation and PIN validation purposes.

1. PIN Creation - The PSP system will generate/build the request to HSM by using PIN generation command, based on the bank requirement UPI PIN may be 4 or 6 digit, HSM will response back to PSP server along with OFFSET value, and the unique OFFSET value will be maintained at PSP server for the customer whenever they try to set the PIN in UPI APP.
2. PIN Validation: The PIN is required every time a customer attempts to make a financial transaction or check their account balance in the UPI APP. After they enter their PIN, the PSP server builds a PIN Verification Command and sends it to the HSM along with the OFFSET value that the HSM had already provided (in the PIN generation command response) for that specific customer. HSM checks the PIN and reports success or failure to the PSP server. If PIN validation is successful, the APP

will let the consumer to conduct financial transactions based on the HSM response, which the PSP server will respond to in turn.

## **Benefits of Thales HSMs**

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Easily conform to mandates with Thales HSMs. Ensure your data is safe from a cyber attack by storing your private cryptography keys inside a hardened, tamper-resistant, FIPS-validated device. Without access to the keys, data is rendered useless. Your organization will benefit from years of experience, and stringent product verification testing that certifies the security and integrity of Thales HSM devices.

## **About Thales**

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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.