

RS RTPS™ - DOSL

Challenges for early generations of Instant payment systems

Real Time Payments or Faster Payments are set to drive the most significant transformation in the global payment landscape, as customers expect convenience and security as well as rapid, instantaneous processing of all their transactions. Real Time Payments are the new normal. As of late 2017, Central banks across geographies have joined the global real-time payments movement to align with market demands. Businesses and consumers across different geographies have expressed a demand for faster digital payments and could benefit from the prompt visibility of payment status and faster availability of good funds. Uncertainty in payment timing and delay of funds receipt can be costly to consumers and businesses as they manage their account balances from day to day. So, the new focus of the Central Banks / Networks around the globe is to implement an instant/faster payment platform with a mobile first strategy.

Many central banks had implemented instant payment systems in the past. With a changing payment landscape and market demand they face the following challenges:

- Adoption for the retail consumer is very low with complicated payment mechanism
- Need to remember and transmit the entire account number, compromising security
- Not built for modern smartphone and app based mobile payments generation
- No provision for innovation and difficult to integrate
- Does not support data rich ISO 20022 protocols, hindering interoperability

To mitigate these challenges, a Digital Overlay Service Layer on top of the existing instant payment system enables higher adoption of the instant payment with security and convenience. The overlay layer fosters innovation and building of new use cases for P2P, P2M and B2B payments.

RS RTPS™ - DOSL

RS RTPS™ - DOSL is a digital service layer that enables the underlying immediate or instant payment system to embrace the modern digital technology driven by APIs and new data rich message protocols like ISO 20022, and enable fintechs and mobile dominant users to get access to real time payment rails. RS RTPS™ - DOSL will sit above the RTP central hub and provide convenience and user-friendliness so

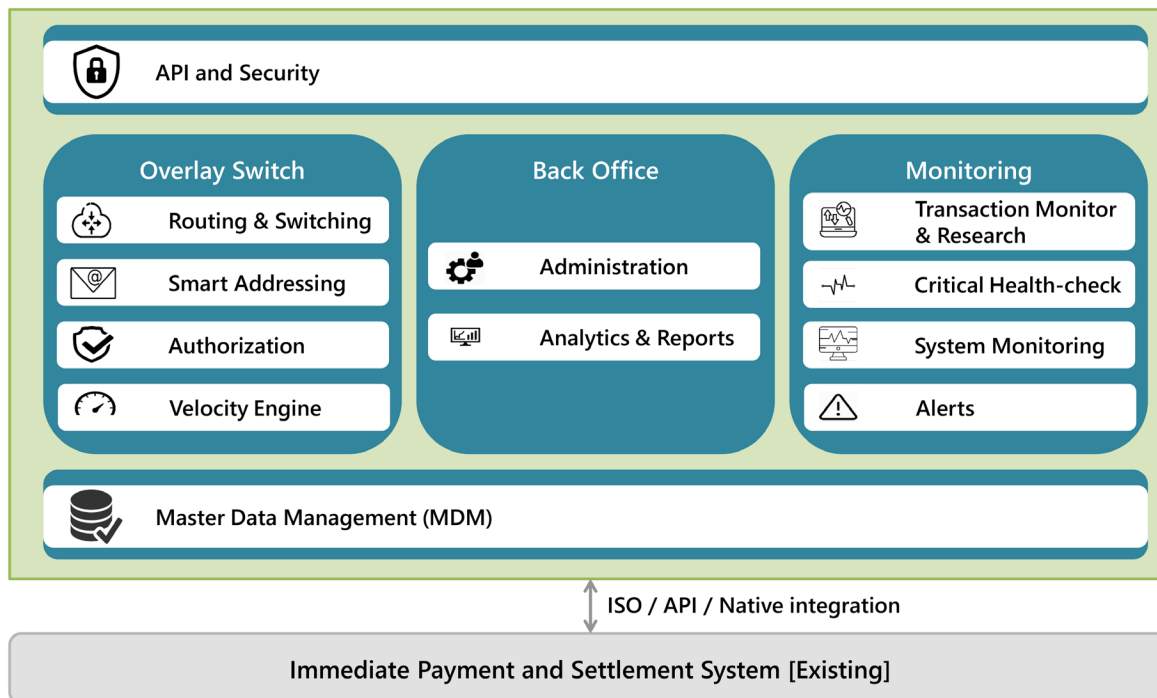
as to promote quick adoption of RTP services. It provides a smartphone-ready, API-ready connectivity layer for easy integration and faster adoption of real time payments with smart and secure virtual payment ids or aliases.

The product enables standardized digital connectivity through APIs and ISO messages and provides proxy / virtual payment-ids for consumers for secure and instant payments. This layer acts as a “bridge” between the core RTP switch and PSPs to enable seamless integration.

To meet market demands, RS RTPS™ DOSL can integrate with older generation immediate payment systems to make them modern real-time payment solutions. This is possible because it provides an API based Digital Overlay Service Layer for seamless integration with banks, accelerating adoption. It also enables smart addressing to ensure transmission of only the payment alias and not the entire account number, thereby increasing security. It publishes real-time payment APIs and meta-APIs for fintechs to foster innovation. RS RTPS™ DOSL not only supports data rich ISO 20022 protocol, it also adapts to older ISO 8583 and native protocols. It enables building different RTP use cases like bill payments or recurring payments.

RS RTPS™ - DOSL is built based on micro-service architecture, and ensures 24x7 availability, 99.999% reliability, horizontal and linear scalability, 3000+ TPS throughput, and end-to-end security. The platform can be implemented in multiple data centres in Active-Active mode or Active-Passive mode ensuring near zero RTO and RPO. The platform supports end-to-end encryption using RSA 2048-bit encryption methodology. The technology stack is chosen carefully to ensure that there is no stringent license binding on the owner, and Total Cost of Ownership [TCO] remains significantly low.

RS RTPS™ - DOSL Business Architecture



RS RTPS™ - DOSL Salient Features

Salient features of RS RTPS™ – DOSL includes the following:

1. Supports both **Push Payment** and **Pull Payment [Request for Pay]**
2. **Smart Addressing** enables payment with virtual payment id
3. **Adopts ISO 20022** in order to embrace all relevant payments data
4. Supports **integration with Mobile App** through APIs and SDKs
5. Immediate **Notification** to **Originating Customers** and to **Beneficiary Customers** within SLA
6. Supports **end-to-end security** and configurable **n-factor authentication**
7. Enables fraud and anti-money laundering checks with **FRM integration**
8. **High configurability** to support local market requirements; Enables the services to be deployed in multiple ecosystems
9. **Lower TCO** with more functionalities built in the central infrastructure and built on open source technology
10. **Cloud-ready** and **In-premise** solution with **configurable scalability** to optimize opex cost
11. Ensures **data privacy** and **in-country data storage**

RS RTPS™ - DOSL Extended Feature Set

1. Onboarding and access management
2. Recurring payments
3. Batch processing
4. Transaction based Analytics
5. Admin Portal and Dashboard

Technology

The platform is based on micro-service architecture with modern modular design.

Key Technical Features

- Supports both Active-Active as well as Active-Passive[DR] architecture for high throughput
- Horizontally and vertically scalable with highest throughput benchmarked at 3000 TPS
- End-to-end data encryption with as high as 2048-bit encryption supporting all standard algorithms like TDES, SHA2, AES, TLS etc.
- Open Software languages

- Support for open source databases and middleware
- Context-free servers and asynchronous queues
- Configuration and scripting to achieve localization
- Resilience through clustering with DR via the database
- Memory-based queuing and NoSQL for transaction data
- Reduces need for specialist resources
- Agile product lifecycle to feed Continuous Integration pipeline

Other Key Features

Scalable: The platform has the ability to scale up and down to support varying numbers of users or transaction volumes. The application is able to scale horizontally (by adding more servers) or vertically (by increasing hardware capacity or software efficiency).

Flexible: RS RTPS™ - DOSL is built on modular architecture, which isolates the complexity of integration, presentation, and business logic in order to allow for the easy integration of new technologies and processes within the application.

Fault tolerant: RS RTPS™ - DOSL is built on N+1 architecture, eliminating any single point of failure.

Why RS Software

RS Software is a leading custom software development house with more than 25 years in the payments industry. Our proven methodologies, comprehensive set of services and continuing innovation are focused specifically on the needs of the space we have served exclusively since we opened our doors in 1991. RS Software has implemented one of the most advanced faster / real-time payment systems in India called UPI [Unified Payments Interface] which is processing more than 900 million transactions per month as of July 2019. The platform is expected to process 12 billion transactions in the next 12 months. In a global survey by FIS, the platform has been rated 5/5 – the only faster payments platform to have achieved this rating.