



RS RTPS™

Faster Payments / Real Time Payments – The Latest Trend

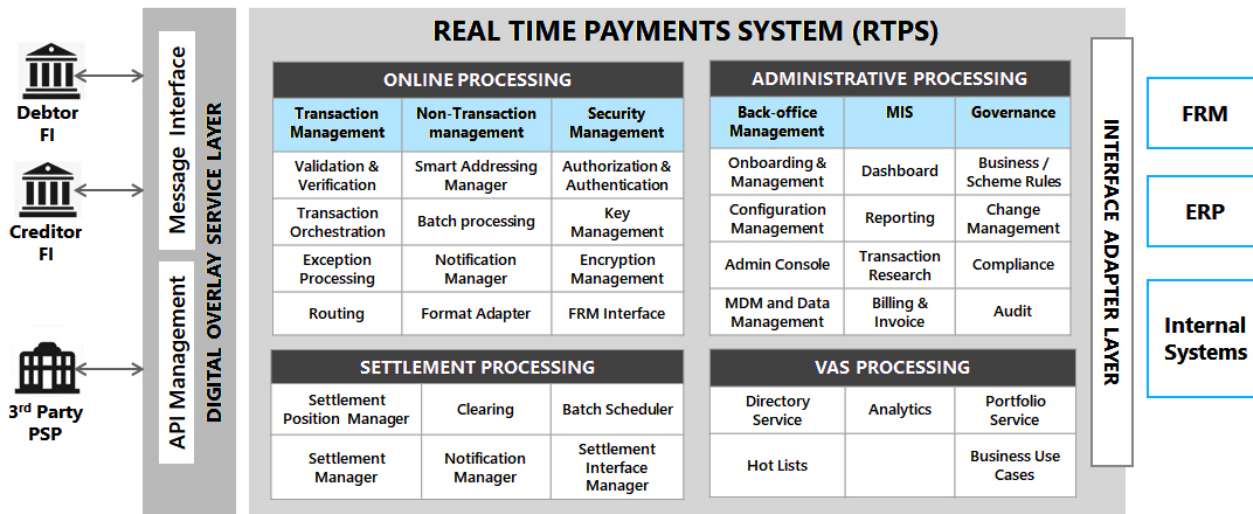
Instant Payments are set to drive the most significant transformation in the global payments landscape, as customers today expect convenience and security as well as rapid, instantaneous processing of all their transactions. Instant Payments are the new normal. As of late 2017, central banks across geographies 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 stand to benefit from the prompt visibility of payment status and faster availability of good funds. Uncertainty in payment timings and delay of funds receipt can be costly to consumers and businesses as they manage their account balances from day to day. Hence, the new focus of central banks and networks around the globe is to implement an instant / faster payments platform with a mobile first strategy.

RS RTPS™ from RS Software

RS RTPS™ is an advanced, state-of-the-art, real-time payments processing platform that is capable of processing instant account-based payments with very high throughput and volume. It is designed to enable both pull and push payments for retail and corporate customers, merchants and governments. RS RTPS™ supports both Pre-funded Settlement and Net-deferred Settlement; with Net Debit Cap and Real Time Liquidity Monitoring.

RS RTPS™ is built based on microservice 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 centers 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™ is designed with a 'mobile-first' strategy that supports ISO 20022 protocol and ensures seamless integration with mobiles, using both payment APIs and meta-APIs that enable authentication, payment and notification functionalities. The platform is future-ready to meet the demand of future expansion and integration with other platforms or components as and when required.



RS RTPS™ - Salient Features

1. Supports both **Push Payment** and **Pull Payment [Request for Pay]**
2. Immediate **Notification** to **Originating Customers** and to **Beneficiary Customer** within SLA
3. Supports both **Deferred net settlement** and **Real-time settlement** and **Liquidity Monitoring**
4. **Smart Addressing** enables payment with virtual payment id
5. Enables fraud and anti-money laundering checks with **FRM integration**
6. **Adopts ISO20022** in order to embrace the all relevant payments data
7. Adapts to **regulatory changes** and market demands with **Scheme based rule management**
8. Supports **integration with Mobile App** through Digital Overlay Service Layer
9. **High configurability** to support local market requirements; Enables the services to be deployed in multiple ecosystems
10. **Lower TCO** with more functionalities built in the central infrastructure and built on open source technology

RS RTPS™ 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 microservice 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™ 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™ is built on N+1 architecture, eliminating any single point of failure.

Software and Tools

| Application Tier | Operating System | Software |
|--------------------------------|------------------|--|
| Application Server | RHEL 7.1 / 7.2 | <ul style="list-style-type: none"> - Java 1.8 - Spring Framework core AOP Transaction Security Batch Spring MVC Spring Reactor Spring Integration - App server – WildFly / Spring Boot - Quartz for scheduling |
| Persistent Cache with failover | RHEL 7.1 / 7.2 | Redis 3.2.9 |
| Temporary in-memory Cache | RHEL 7.1 / 7.2 | Memcached |
| Internal message transmission | RHEL 7.1 / 7.2 | Kafka |
| Database | RHEL 7.1 / 7.2 | Oracle 12c |
| MIS Reporting | RHEL 7.1 / 7.2 | Jasper, HTML5 |
| Analytics and Monitoring | RHEL 7.1 / 7.2 | ELK (Elasticsearch, Logstash, Kibana) Datadog |

Why RS Software

RS Software is the leading custom software development house for the payments industry 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.