Baton
Post-Trade • Redefined

Baton CORE™ Platform

Transforming costly and inefficient post-trade operating models with interoperable DLT

Mohammad Abidi
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In the March edition of PAY21, Mohammad Abidi, Vice President of Engineering, provides an overview of the technology that powers Baton CORE.

Technology Suite

As Mohammad explains, the Baton CORE platform comprises of a set of stateless microservices. These microservices are able to scale independently of each other, based on the loads and event traffic experienced at a given time. The three main components of Baton CORE are:

- **Baton's Client Gateway**
- **Baton's Shared Permissioned Ledger**
- **Baton's Smart Workflows**

> **The Baton CORE platform is able to process and settle real currencies and assets.**

Baton CORE: Client Gateway

The Baton CORE platform is able to process and settle real currencies and assets. This is achieved by connecting to the ledgers of financial institutions via the Baton Client Gateway. The key advantage being that Baton CORE does not require conversion to digital tokens or cryptocurrencies.

This allows the bank to run the compliance checks before releasing the payments.

Baton CORE: Shared Permissioned Ledger

A trade, Mohammad explains, goes through a set of states from initialisation to completion. These are dependent upon the configurable Smart Workflow steps required. All states are immutably saved into the blockchain-inspired Baton Shared Permissioned Ledger, providing an auditable and encrypted data store.

The innovative use of DLT enables the transactions, data and workflows to benefit from the transparency, tamper resistance and non-repudiation advantages this technology offers.

Think of a ledger as a materialised view based on permissions

The secure ledger can be accessed by multiple subscribers on a permissioned basis. This could include both internal or external customers. An example of an internal customer could be an internal system, an external customer could be an observer or regulatory body.

Through the shared permissioned ledger the lineage of each trade is preserved. This provides a 'single source of truth' and cryptographic proof of both parties' agreement to the details of the trade and the current status of execution via public and private keys.

Data is encrypted both at rest and in transit. Each contracting bank operates a node with party-defined visibility of the data. Through the use of single tenant cloud architecture, data access is securely siloed and limited to the designated parties to the trade. The parties are then able to pre-agree data access for any workflow steps which take place within the counterparty's operational structure.

Baton CORE: Configurable Smart Workflows

Baton's Smart Workflows represent the business processes that a particular transaction goes through. These workflows are *"similar to the smart contracts that you have on other DLTs,"* Mohammad explains. *"All state changes are recorded in an immutable fashion onto the Shared Permissioned Ledger."*

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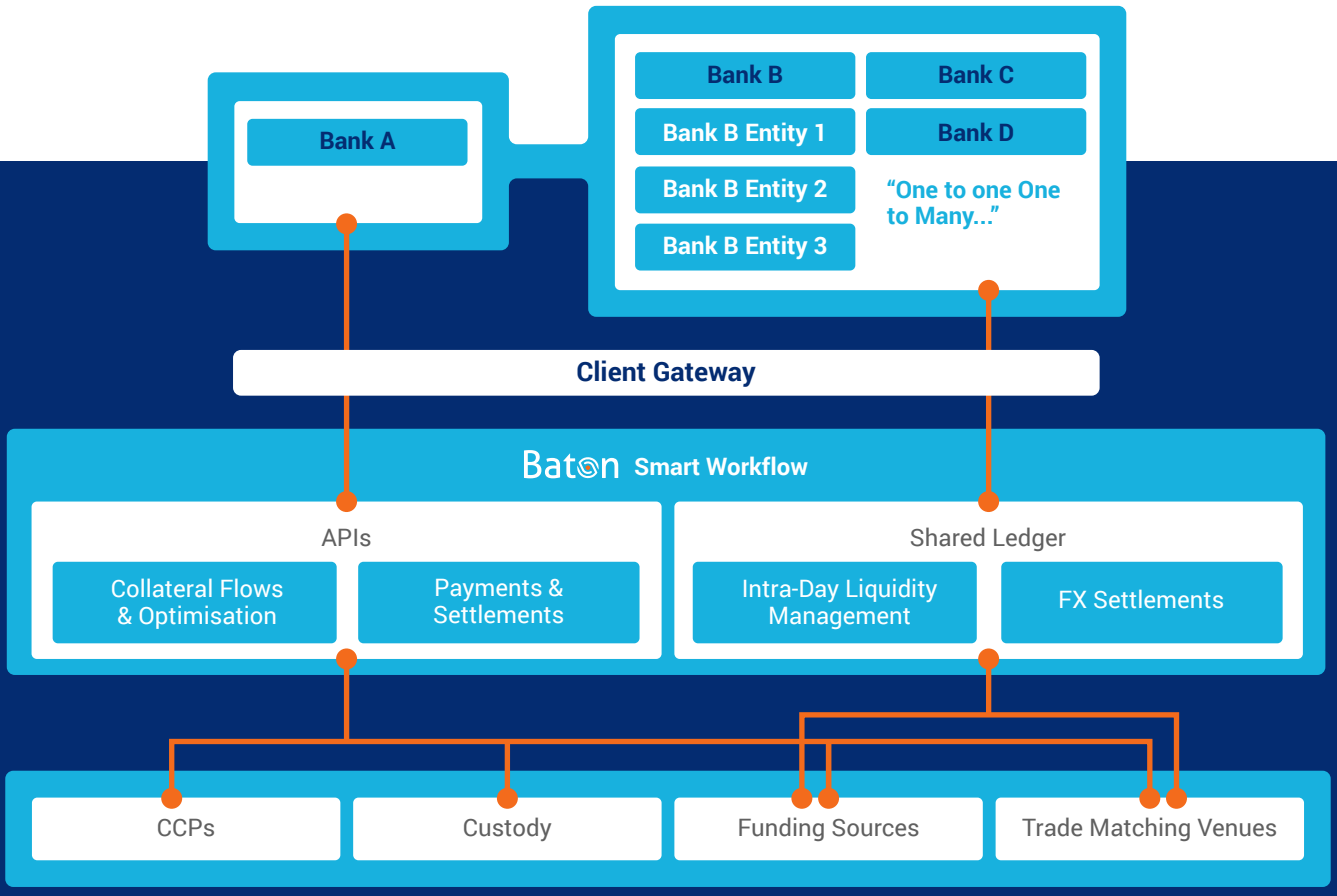


The workflow itself can be divided into public and private steps. The public steps are shared between the two parties to a transaction, whereas the private steps, such as a required approval or a particular threshold, are particular to a given node on the Baton Shared Permissioned Ledger or an individual participant. These private steps, that are local to the bank, allow for custom steps to be added.

Aggregate. Access. Activate

Another of the Baton CORE platform's features is the ability to aggregate incoming trades. The state of these trades are then assessed by a configurable rules engine, which can define thresholds or time-of-day events, for example, and based on these rules activate predefined workflows. The rules engine also allows for the creation of complex netted rulesets.

The activation step is a set of workflows which execute across nodes on the shared ledger, to settle assets or payments.

Interoperability

The Baton CORE platform has been designed to be interoperable, enabling the technology to seamlessly interact with the banks own systems such as core ledgers, payment gateways and messaging systems using secure access protocols, adapters and APIs. Baton integrates to the payment gateways of the bank through SWIFT/MQ/File based protocols. Baton supports an array of file formats for ease of integration, ISO20022, SWIFT MT, Flat files, FixML and XML. This eliminates the immediate need to rip and replace legacy systems or processes before a bank can start to take advantage of the technology.

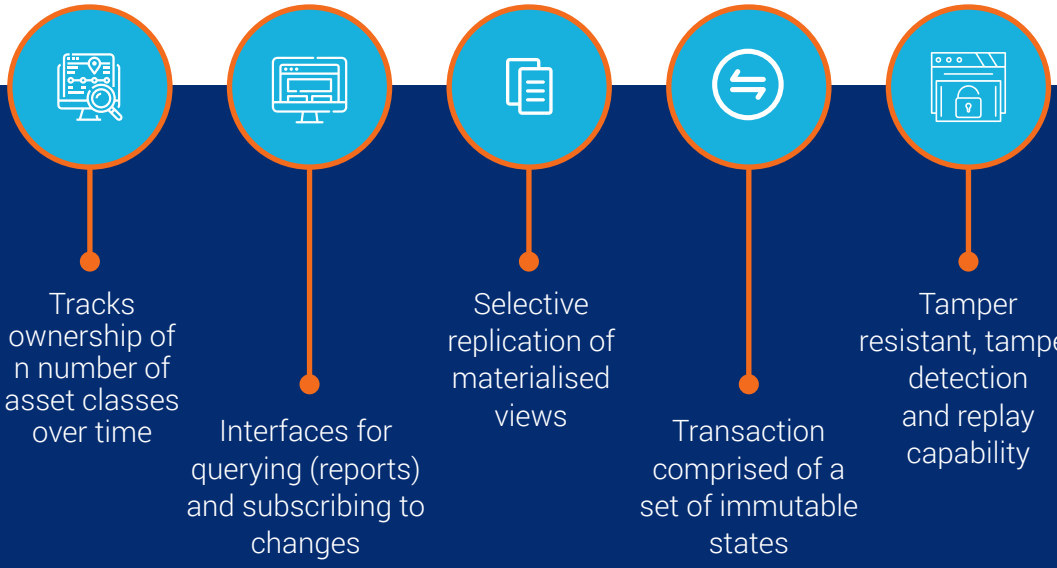
SOC2 Type 2 Compliance, InfoSec, Business Continuity, and Disaster Recovery Planning

Finally, Mohammad outlines the operational considerations that the Baton CORE platform offers:

The Baton CORE platform has been SOC2: Type 2 compliant since 2019. Baton has well-documented processes covering security, business processes such as change management, disaster recovery and business continuity.

Baton has a dedicated InfoSec programme with an external partner which runs monthly vulnerability tests, the findings from which are reviewed, prioritised and fixed. Baton also runs quarterly external penetration tests.

DLT (Shared Permissioned) Ledger Constructs



"We also monitor all of our production environments very actively," Mohammad says. *"We use a variety of security monitoring for our network, computes and applications to detect any anomalies and alert based on those."*

Baton also regularly runs business continuity and disaster recovery plans to ensure that Baton is ready for any downtime that might occur.

"The ability to provide high-quality support to our global client base is very important. We conduct monthly business reviews with our clients, where we review our SLAs, the capacity the system has

Baton also regularly runs business continuity and disaster recovery plans to ensure that Baton is ready for any downtime that might occur.

and any features previously implemented and those upcoming." Baton works closely with its clients to prioritise and implement new features and offers appropriate training on these new features.

About Mohammad

Mohammad Abidi is Vice President of Engineering at Baton Systems, responsible for leading the design, architecture, and development of the Baton CORE platform.

Mohammad has over 20 years of experience as a technologist with a proven track record of innovation and success. He joined Baton in 2016 from Yahoo, where he was Senior Technical Program Manager, working on the Mobile Search Innovation team on scaling the search infrastructure and user engagement experimentation based on user profiles. Prior to this, he was Director of Engineering at CompassLabs. Mohammed has also held positions at AIAG, an automotive standards organisation, Oracle, Sybase and Peoplesoft.

Mohammad holds a BS in Electrical Engineering from the University of Texas at Austin.

About Baton Systems

Baton Systems is revolutionising the entire front-to-back post-trade process, introducing interoperable and connected digital market infrastructures from trade matching through to settlement. Empowering financial institutions to take control with automated, rules-based workflows, access to real-time information, and on-demand settlement, Baton is redefining what post-trade processing should look like: fully connected, friction-free, flexible and transparent.

Founded in 2016 by Silicon Valley technologists and capital market specialists, Baton's solutions are now being used by several of the world's largest financial institutions to facilitate the movement of billions of dollars of cash and securities on a daily basis.