SPARKL®

BRING MACHINES TOGETHER

Introduce Blockchain to Your Business

SPARKL® Use Case

The dust is settling around blockchain and distributed ledger technologies.

Platforms such as Ethereum seek to position blockchain as a transparent, global computer upon which anyone can codify actions and states, such as smart contracts.

Their story goes that anything, in principle, can be represented and computed on the chain.

The core value proposition of blockchain is straightforward: tamper-proof, append-only logs where changes to data are provably correct.

But because of the way code-on-chain works, the language used must be very constrained to ensure correct behaviour. Thus many blockchain solutions force users to use specific programming languages to construct things like smart contracts, leading to fragmentation and inefficiency.

As a result, major problems arise in the areas of cloud and legacy systems integration, fine-grained privacy, on-demand provisioning and true distributed intelligence.

It's always been hard for enterprises, such as banks and reinsurers, to make distributed machines, systems and applications work together. It is commonly accepted that a unified or holistic approach should be encouraged.

The question therefore, is how to deliver the core value of blockchain given the swamp of black box systems clogging up every business today.

As with every wave of new technology, it's all about balance - and that is exactly where SPARKL Clear Box® comes in.

SPARKL® Solves

What is SPARKL?

The lightning fast SPARKL Sequencing Engine uses our simple, declarative Clear Box® configuration to make distributed systems work together intelligently, driving normalised events between machines, applications and things.

SPARKL uses blockchain technology, such as Hyperledger Fabric, to record state data and tamper-proof recorded event logs in a complete audit trail. Depending on the application, we can also use and improve several aspects of blockchain technology to 'fill in the missing gaps' and provide greater value to our users.

01 - Unify On-Chain and Off-Chain Logic

SPARKL Clear Box configuration lets users express logic that requires consensus across nodes in the exact same place as logic that requires call-out to external services.

This solves the problem of fragmentation that exists with other solutions, and removes the need for special "oracle" services.

02 - Integrate with Legacy and Cloud Systems

Systems of all kinds are expressed in the same way using Clear Box configuration. This includes their specific capabilities, such as responding to requests for information or generating events that trigger business workflows.

With SPARKL, modern and legacy systems can work together to solve a business requirement, without having to expose details about those systems where confidentiality is required.

03 - Common Tool for Orchestration DevOps

With Clear Box, DevOps only need to look in one place for all the information required to make systems work together - even when those systems are completely unique to each other and use blockchain in different ways to achieve the end result.

This allows each step in a flow to be unit-tested, as well as entire transactions to be system-tested, solving the problem of fragmented tools and out-of-date documentation for maintainers.

04 - Vendor Lock-In

SPARKL Clear Box® configuration is primarily mark-up. You can use any language or mix of languages you like when implementing parts of an overall blockchain solution.

This is particularly important where you need to leverage the power of specific utilities or languages. For example, consider the generation of a PDF contract document from your smart contract - is this realistic if you're using native Go or Solidity?

SPARKL technology is completely open, bringing ease to the problem of vendor lock-in. Users can choose and leverage the strengths of various blockchain technologies to solve a given business problem.

05 - Application-Specific Privacy

A consortium of stakeholders may want to operate a blockchain solution between them. For a single application - such as the management of a particular legal contract - the parties involved may be only a subset of those in the consortium.

Other blockchain solutions allow every validating node to see everything, which is often unnecessary in an enterprise context.

With SPARKL, you can mix and match blockchain solutions as required per solution. For example, Clear Box can ensure only selected parties can see the right data on a permissioned chain, and all parties can see public data on a chosen public chain.

06 - Signing Workflow

Clear Box configuration is document-based. SPARKL can provide a signing workflow such that all parties to a given business process can digitally sign the configuration before it is allowed to execute and drive events through the workflow.

All parties can agree to a shared, self-executing contract before it starts processing on their behalf.

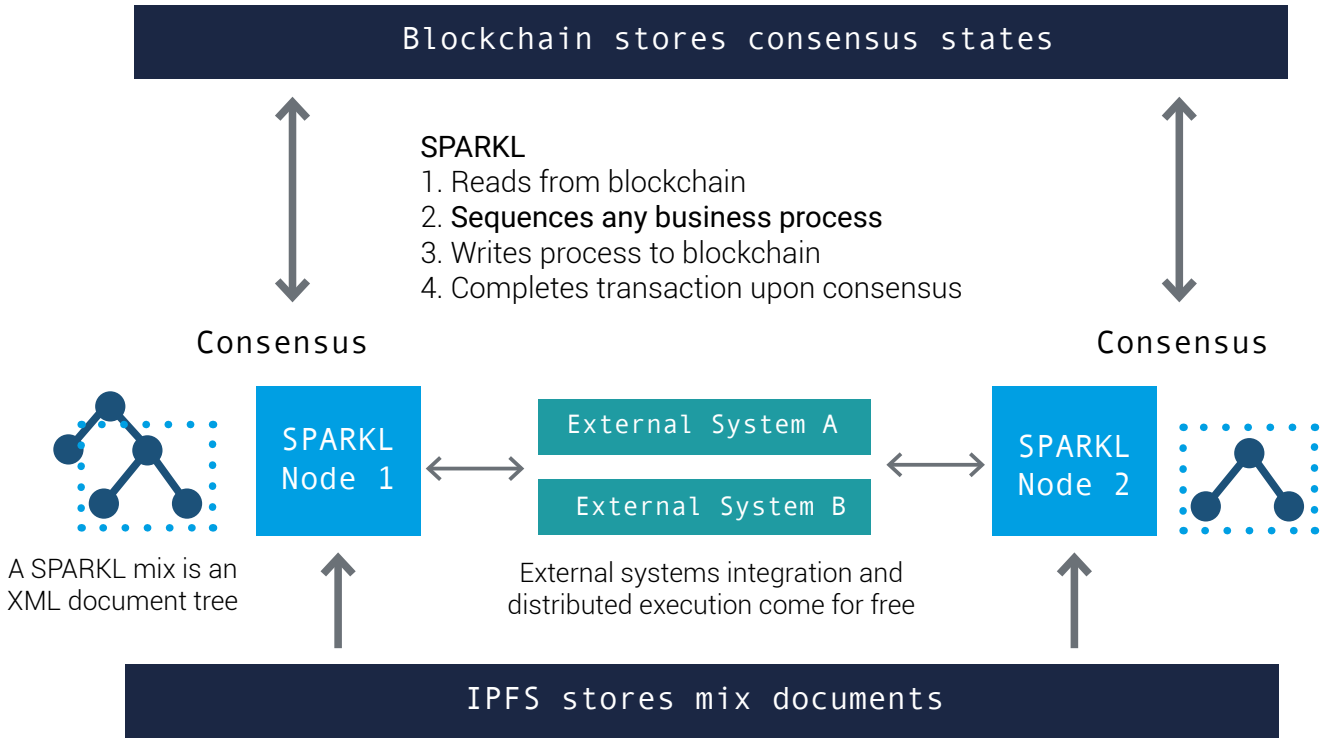
07 - Analytics Support

Other solutions offer little in the way of analytics and reporting capabilities for the shared/on-chain computations they manage.

Some third parties offer solutions for specific chains or ledgers, but these solutions can fall short, locking you into a specific blockchain with no end-to-end analytics support covering both on-chain and off-chain parts of an application.

SPARKL provides a complete, normalised audit trail of every event, both on-chain and off-chain. This can be secured and made tamper-proof on a preferred type of blockchain. Users can also push the audit trail to external business reporting and analytics tools for compliance and high performance.

SPARKL Brings On and Off-Chain Together



Summary

01 - Allows consensus as part of larger transactions

02 - Execution lock on both mix signing and execution-time consensus

03 - Straightforward integration of any external systems and services

04 - Complete, normalised audit and logging for both on and off-chain across all systems

05 - Analytics is the same for on and off-chain using any standard tools (Kibana, Splunk etc)

06 - Absence of vendor lock-in for both blockchain and other components - e.g. SPARKL integrates OCaml functions and more

07 - Easy distributed execution for jurisdictional, confidentiality or security purposes

08 - Provides value-added features, such as contract signing

09 - Ensures application data is only visible to parties involved

10 - Powerful tool for orchestration DevOps

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