PARTNER BRIEF

Financial Services
Data Provenance

Achieve Data Provenance Control and Compliance

Build tailored reporting and auditing processes that ensure consistency across the organization with SPARKL and Intel® technology

"SPARKL's innovative Sequencing Engine technology provides rich insights and comprehensive analysis in its transaction reporting, ensuring a valuable asset to all businesses looking to adopt a digital strategy and transition into the expanding digital economy."

Ged Fitton, Senior Business Development Manager, Cisco

Executive Summary

The rise of digital banking practices and the importance of data-driven decision making in financial services have significantly increased the types, sources and volume of data most banks hold. Correspondingly, industry regulators are implementing increasingly strict rules and requirements to ensure customers are treated fairly and that risk – to customers, banks and the industry overall – are minimized. Industry regulation has a big focus on data provenance. For instance, BCBS239 mandates requirements for end-to-end data lineage analysis and reporting to satisfy audit requests from regulators.

This means that being able to accurately track, control and report on data provenance within a bank is more critical than ever, whether it be to prove compliance with rules about how and where data can be used, or to demonstrate the data used in making a particular business decision.

The SPARKL Sequencing Engine*, running on Intel® technology, brings together all data sources and enables you to build tailored reporting and auditing processes to ensure compliant and consistent processes are followed across the bank – securely, flexibly and with the performance to accommodate additional innovation in the future.

SPARKL®

Regulatory Pressure and Digital Disruption Transforming Banking Practices

Today's compliance landscape is increasingly complex. Regulators pressure banks to report their positions on various types of risk, both in regularly scheduled updates and in response to ad hoc requests.

A typical global bank may have several thousand applications over many thousands of databases. Each of these may be a separate 'black box' system whose internal operations cannot be inspected or tracked from the outside. This mix of siloed data sources can stifle agility, flexibility and innovation, significantly increase the potential for conduct risk and hinder banks' ability to report on it.

In order to perform analytics over all this data, it often needs to be moved across geographic boundaries. In order to do this, banks must reach agreements with the regulators in each geography to move that data, and also put in place agreements that strictly define the way that data may be used and the length of time for which it may be stored. Breaches of these agreements can put customer data and company reputations in jeopardy.

With such intricate processes involved, audit trails must be clear and reliable. They must be able to prove that the right data followed the right route to get to the right place, and that it was only used for the right purposes once it got there. When it can't do this, a bank can face significant repercussions from organizations like the Financial Conduct Authority (FCA) and the Prudential Regulation Authority (PRA).

The challenge is not only driven by the sheer volume of data and the complexity of the way it is – or is not – joined up across the organization. Another issue stems from the fact that many systems and processes are still heavily manual. Working out how and where a certain data set has been used after the fact can be next to impossible, not to mention costly, as it typically requires a number of forensic analysts to spend many hours poring over spreadsheets and databases to deliver a report that may or may not be fully comprehensive.

Like many other industries, financial services is undergoing a period of disruption as new players built on digital business models come to the fore. These more agile players are driving innovation in traditional ways of working, such as the introduction of mobile- and social media-based banking services. This means that updating regulatory reporting for traditional banking practices is no longer enough. Organizations must also consider how their data can and should be used to enable richer and faster services for customers, wherever and whenever they want them.

Driving Compliance and Banking Innovation

The SPARKL Sequencing Engine*, running on Intel® architecture, supports use cases for compliance, data governance and data lineage, addressing many of the requirements mandated by the Financial Regulators. It can be configured to monitor and log all interactions with a system, and raise alerts or take other actions when there is a policy breach.

Auditing and Reporting

Each time a financial product or service is sold, important decisions must be made to ensure that the bank's financial risk is acceptable and that the customer is able to afford the cost without danger of default. Strict service level agreements (SLAs) and other regulations are in place to ensure fair treatment of the customer and that the bank is not incurring excessive risk.

Most of these decisions are automated and based on a complex multitude of data – ranging from the bank's overall pricing structures to the customer in question's financial history and credit health. However, these data sources may require manual maintenance. For example, a spreadsheet updated by hand every Friday may then be linked to hundreds of other spreadsheets across the company. If the individual responsible for updating the original document goes on vacation or leaves the company, all the dependent spreadsheets may become out-of-date or inaccurate, meaning any decisions based on them could be flawed.

The SPARKL Sequencing Engine enables you to ensure all data connections are clearly monitored and any movement of data is recorded, flagging any SLA or regulation breaches in a timely manner so that they can be addressed immediately. By creating real-time records of all data movement within the organization, it also allows you to create detailed ad hoc reports to satisfy regulatory auditors.

"SPARKL's innovative Sequencing Engine technology provides rich insights and comprehensive analysis in its transaction reporting, ensuring a valuable asset to all businesses looking to adopt a digital strategy and transition into the expanding digital economy," said Ged Fitton, Senior Business Development Manager, Cisco.

Enforcement

Financial organizations must also ensure that existing regulations and processes are properly adhered to on an ongoing basis. For example, if a certain data set is not allowed to cross national boundaries, or may only be used for a specified purpose, the bank runs the risk of severe penalties from the regulators if these stipulations are breached. It must have effective measures in place to enforce these rules. Similarly, if existing regulations change, such as the changes to the 'safe harbor' data sharing agreement between the US and EU in 2015, banks must be able to quickly adapt their systems and data flows in order to stay compliant.

With the SPARKL Sequencing Engine, powered by Intel technology, you can become the custodian of your data. The solution enables you to tailor and set rules controlling where, when and how data is moved within your organization and across national boundaries (fig 1). This provides assurance that the processes upon which your business relies are in line with SLAs and industry requirements, and helps eliminate much of the manual effort that can be the source of human error and inconsistencies.

Solution Architecture: Data Provenance Reporting

The combination of the SPARKL Sequencing Engine and Intel technology delivers a data provenance architecture that can be tailored to your organization's requirements, business flows and data management responsibilities (figure 1).

Delivered as an installable software package, an embedded controller, or a web-based Developer Console, the SPARKL Sequencing Engine runs on many device types, from Intel® technology-based tablets through to complex server environments running on the latest generation Intel® Xeon® processors.

The solution can be configured to monitor and help manage:

- Data center resources, so it can check whether a system is updated in line with policy and raise an alert or instigate actions (such as patches) when required.
- The trader's freedom to trade, based on the risk they present. It can, for example, look at the device the trader is using, the network they are on, the time of day, and the riskiness of the investments. This adds an additional layer of security and SPARKL can intervene by raising an alert or instigating an action if necessary.
- Intents the business may have, such as processing trades or updating ledgers. For example, SPARKL can be used to monitor investments in a portfolio, compare them with the risk profile and raise an alert or take an appropriate action if the portfolio drifts outside of the desired risk profile.

Once configured, SPARKL captures event trails that show the business processes that have been executed, and elicits the original business intents. The provenance of data, and how it flows through the enterprise, is available for analysis and for demonstrating regulatory compliance. This is in stark contrast to the usual process of following a data provenance audit program by hand.

Data Provenance - Storyboard Visualization

SPARKL Data-as-a-Service and Workflow Orchestration (e.g. BCBS239)

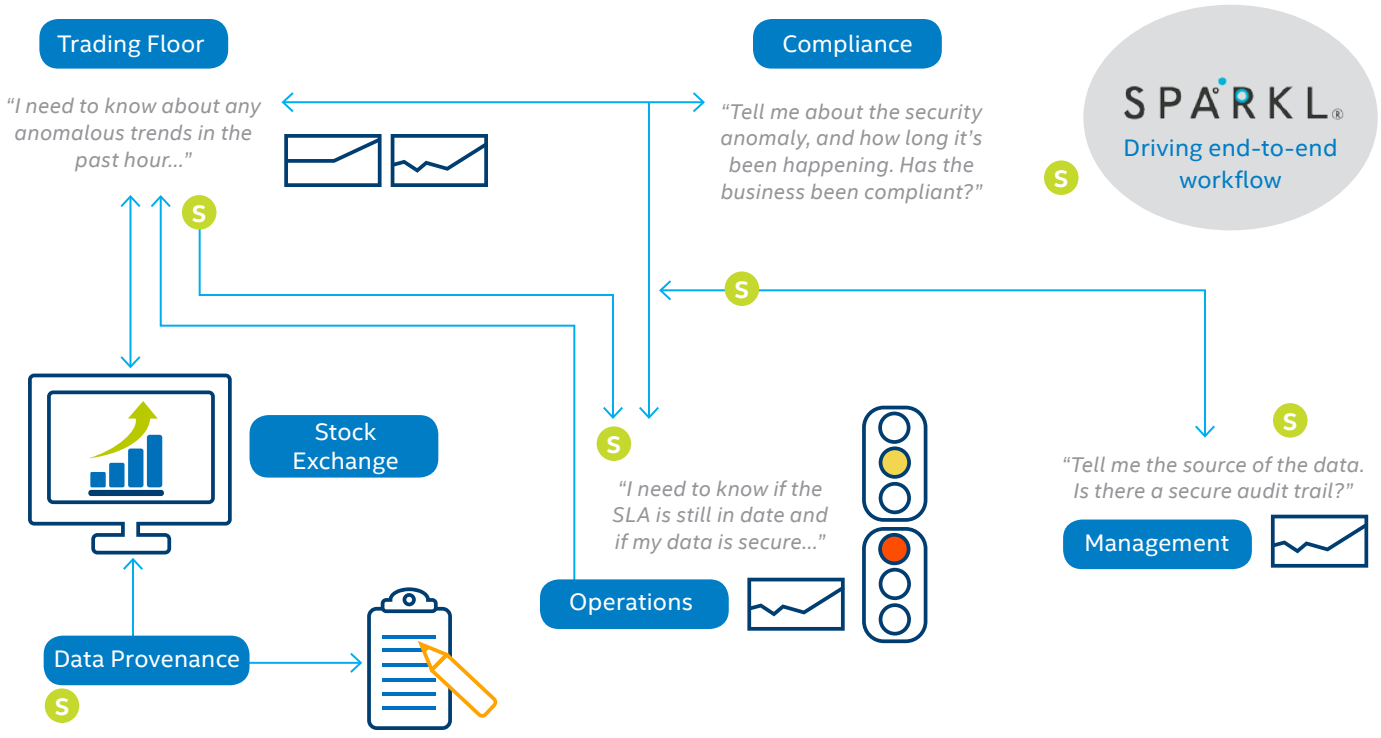

Figure 1: Typical SPARKL data provenance solution architecture

Solution Value: Visibility, Control and a Foundation for the Future

You can achieve value from the SPARKL Sequencing Engine running on Intel® technology in five key areas:

- **Transparency:** Clear configuration unites all data and systems. When based on Intel architecture, the solution creates an interoperable environment that enables multiple types of device and platform to work seamlessly together. SPARKL also logs every single interaction between these systems, creating a clean, connected audit trail. You can look inside your operations any time to see what's involved in any process, giving you new, regulatory insight and control.
- **Freeing Capital:** By easing the management of disparate systems, you can save costs and maintenance resources. Greater control and visibility help create opportunities to reshape the IT architecture for competitive advantage, as well as generating strong return on investment (ROI) by bringing together legacy and modern systems.
- **Agility and Flexibility:** The SPARKL Sequencing Engine introduces Reasoned Provisioning which spins up secure, on-demand infrastructure to meet the needs of actual business logic, with high levels of granularity. Intel architecture supports software-defined infrastructure environments that can be re-designed and adapted on the fly.
- **Security:** The SPARKL Sequencing Engine makes cloud, edge and legacy systems work together, ensuring your data stays in the right place to help ensure protection. Intel® Security provides built-in data encryption, network and endpoint security to protect data at rest and on the move.
- **Distributed Intelligence:** The solution enables true fog computing, allowing edge devices to interact with or without the cloud, enabled by the powerful computing performance of Intel technology. This ensures a smoother experience for users and reduces the burden on corporate networks.

Conclusion

Responding to regulatory audit requests can tie up valuable time and resource that would be better spent on driving innovation. However, overcoming the complex and often siloed data landscape that exists in many financial institutions is a challenge. The SPARKL Sequencing Engine is designed to make multiple machines, databases and applications work together, creating one centralized, consistent and reliable data provenance and reporting model. Running on Intel architecture, it is ideally positioned to deliver smooth interoperability, flexibility, security, scalability, and the performance needed to power the at-the-edge analytics essential to IoT-driven business models.

Find the solution that's right for your organization. Contact your Intel representative, visit http://www.intel.co.uk/fsi or http://sparkl.com/.

Solution Provided By:

SPARKL®

intel®

2016/xxxx/xx/PDF ♻Please Recycle XXXXXX-001US