

JBoss ENTERPRISE DATA SERVICES PLATFORM FOR FINANCIAL SERVICES

DATA SERVICES BRIDGE THE GAP

Banks, investment firms, insurance companies, and other financial services institutions today face an economy that has changed radically, but is still as fast-paced as ever. Fierce competition, economic uncertainty, mounting regulatory requirements, and data security threats are only a few of today's financial industry challenges. Financial institutions are right at the heart of the information economy. Company leaders and technology innovators know that improving the management, integration, and delivery of information will help the firm reduce exposure and manage risk more effectively, comply with new regulations and standards, innovate and excel in client service, deliver new products faster, streamline operations, and fine-tune cross-selling, up-selling, and other marketing strategies. Pursuing these goals, companies face numerous obstacles, such as brittle legacy systems, incompatible data formats and semantics, and organizational silos.

Modern architectural approaches, such as service-oriented architecture (SOA), are helping companies execute critical projects faster. But while SOA eases development and maintenance of the software that runs the business, SOA cannot, in itself, address data complexity or overcome the challenge of gathering the data that exists and delivering it in the right form for new applications and users.

JBoss® Enterprise Data Services Platform is bridging this gap today with software that helps financial institutions create, deploy, execute, and manage the data services that will make SOAs really work for enterprise data. Data services decouple business applications from diverse existing data sources. They streamline development and maintenance by isolating data access and integration logic and by eliminating unnecessary and redundant custom coding. They also provide a reusable way to resolve semantic differences between different systems for better interoper-

ability. As a result, the organization can complete projects more efficiently and create implementations that maximize flexibility for the future. JBoss Enterprise Data Services Platform, part of the JBoss Enterprise Middleware family, is proven open source software for creating, deploying, executing, and managing data services. In Red Hat's work with financial services institutions, the company has helped shorten projects, reduce development costs, control data redundancy, streamline data integration, and improve organizations' ability to deliver information to the applications and users that need it most. JBoss Enterprise Data Services Platform has proven itself on some of the most demanding projects in the world.

MANAGING REFERENCE DATA

Investment banks and brokerage firms depend heavily on reference data—critical information about customers, securities, and counterparties—to support their trading and settlement operations. Reference data is stored and managed where it is used in the line of business, across front-office and back-office systems, and in multiple product line silos. Because reference data is so widely dispersed, it can be highly redundant; managing these redundancies and incompatibilities between different systems and formats can be a labor-intensive, error-prone process. According to one Tower Group survey, 30% of all trade failures are the result of inaccurate reference data. The reference data problem is particularly challenging for those units that support operations across the traditional asset-class-based silos. Whether the data is coming from outside the organization (security information feeds), inside the organization (client data from another group or central store), or from your own analytical processing, JBoss Enterprise Data Services Platform can help you create a data service layer that will assemble a single, authoritative view of a security, a client, or other core reference data from operational systems and deliver it efficiently to other systems that need it. Because information is stored in the operational systems, data is consistent, current, and accurate.

SOLUTION EXAMPLE:

Securities reference data for accurate trading, accounting

One of the world's leading financial management and advisory companies is also a leading global underwriter of debt and equity securities and a strategic adviser to corporations, governments, institutions, and individuals worldwide. With securities data received from a wide range of sources and stored in multiple locations within the company, it was difficult to achieve consistency in pricing and in other securities data needed for trading and accounting. The firm required a consistent view of securities data.

Custom coding point-to-point data access and updates for the various sources proved too expensive and inflexible, requiring re-coding when new data sources became available. Once a system of record was established for each type of information, JBoss Enterprise Data Services was able to put the information together in the forms needed by the application and convert it to XML for use with a messaging system that served over 50 front-end applications such as trading and reporting systems. Models in JBoss Enterprise Data Services Platform defined a common view of the security information, and consuming applications were able to use data services provided by JBoss Enterprise Data Services Platform to obtain the information. The result was consistent data, more accurate trades, and improved accounting and risk management. In addition, new data sources are accommodated much more quickly and more than \$3 million was saved in IT costs overall.

CREATING THE SINGLE VIEW

Many institutions have multiple relationships with the same clients and confront perplexing challenges as they try to give managers a clear view of the client's accounts and overall relationship with the institution. The pace of mergers and acquisitions exacerbates the problem. Organizations need consolidated client information as input to a range of business activities that drive higher revenue. It can facilitate better client segmentation for retention, cross-selling, and up-selling, and is a critical success factor for organizations that wish to compete on the basis of client service. JBoss Enterprise Data Services Platform can help to assemble information from diverse operational systems and provide a unified view of the client. The same capabilities can be used to provide a single view of other information such as a trade or a security, fostering better analysis and exposure management.

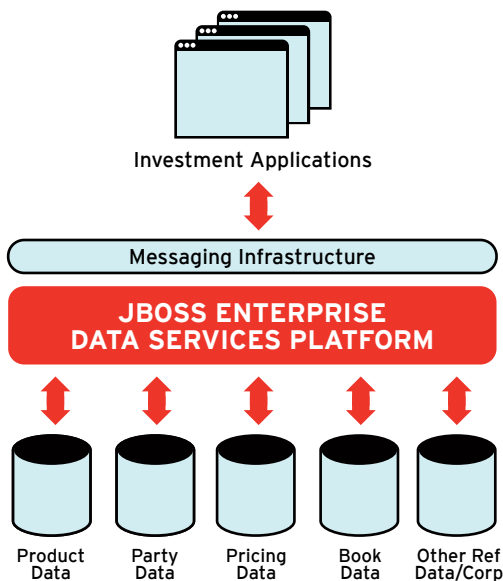
SOLUTION EXAMPLE:

Banking client hierarchies

The investment banking division of a major worldwide bank wanted to gather and maintain information about client account hierarchies for the entities with which it does business. Several legacy systems each contained some client hierarchy information; data sharing was limited. Producing revenue reports across these systems was a slow, labor-intensive, and inflexible process because there was no standard for how to represent the clients with whom the bank did business or how to roll up revenue data. A comprehensive and accurate set of client hierarchies, shared among the various groups and revenue systems, was critical to providing executives with decision support capabilities in order to, for example, identify potential cross-selling opportunities.



CONSISTENT SECURITIES DATA



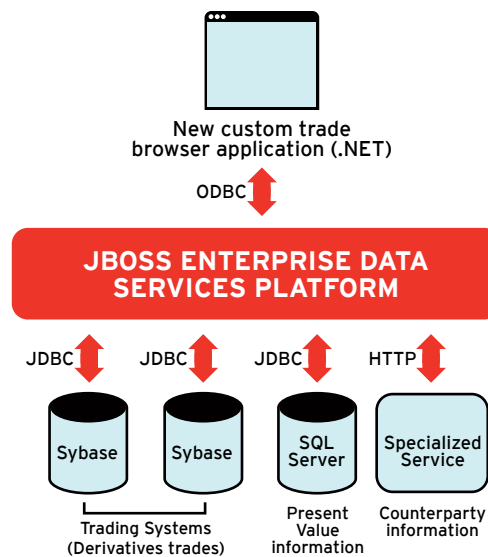
JBoss Enterprise Data Services Platform provides a layer of data services that helps deliver consistent securities data throughout the enterprise.

JBoss Enterprise Data Services Platform provided a layer of abstraction over the data sources and facilitated creation of a single view of data from those sources. The client hierarchy data is provided to systems around the world through a layer of JBoss Enterprise Data Services Platform. By creating this new system, the bank has been able to improve client service for several different groups, eliminate maintenance costs for some older systems, produce accurate and consistent revenue reports, and make more effective use of the rolled-up client data for marketing and risk management.

SOLUTION EXAMPLE:

Derivatives trade browser – single view of the trade

The derivatives trading group of a major financial services firm needed to implement a custom application that would allow company representatives around the world to quickly browse and export information about specific derivatives trades. The new system would replace three older systems that previously had to be used separately, did not provide all the information needed, and were sometimes hard to understand. Information was stored in four different data sources. Two different Sybase databases supporting different derivatives trading systems contained the bulk of the detailed information about the trades themselves. A third data source available through a web service interface provided reference information. A fourth data source, a Microsoft SQL Server database, enabled the application to provide information on present value as part of the trade detail.



JBoss Enterprise Data Services Platform unifies data from two trading systems and other sources to deliver derivatives trade information to an application used by company representatives around the world.

The company used JBoss Enterprise Data Services Platform to federate data from the four sources, creating a single virtual table with all required information. This abstraction layer resolved semantic and format differences between the two different derivatives trading databases and then incorporated information from the other two systems. The application was insulated from the need to know where individual data elements were stored.

With the new system, a user who receives a call about a given trade can quickly search the database using any of several different fields to produce a summary list of trades matching the search criteria. Then the user can drill down into a single trade to display more detail and can export the information to Microsoft Excel for confirmation or dispute resolution.

By using JBoss Enterprise Data Services Platform, the company was able to reduce expected development time, provide all required data for end users, and provide consistent, current information with required performance and scalability. In addition, the company eased migration of back-end systems by using an abstraction layer to insulate the application from the details of the various data sources.

COMPLYING WITH REGULATIONS AND STANDARDS

Today's financial institutions confront a rapidly changing and uncertain regulatory environment. Already faced with numerous regulations following from the USA PATRIOT Act, the Bank Secrecy Act (BSA), and Basel II accords, organizations are confronting new requirements for transparency and reporting arising in response to the financial crisis that began in 2007. New reporting initiatives require new views of data. JBoss Enterprise Data Services Platform can help project teams resolve semantic differences among data maintained in diverse systems to deliver the right information for compliance initiatives, and can help the organization control its use of sensitive information. In addition, JBoss Enterprise Data Services Platform can help bridge the gaps between an institution's own standard data and the new vocabularies and formats mandated by trading partners or regulatory agencies. With JBoss Enterprise Data Services Platform, institutions can comply more quickly, operate more efficiently, and safeguard information more effectively.

SOLUTION EXAMPLE: VISA CISP compliance

VISA CISP was a standard set of best practices from VISA designed to protect credit card information that flows between merchants and card issuers. To comply with CISP standards, a major US bank embarked on a project to consolidate credit card information. Some of this data was centralized in a hub, while other data sources were federated. The result was a unified access layer that eliminated the numerous replicas, extracts, and data marts formerly created for analysis of this information.

To control the information and create required data views for analysis and reporting, the bank federated data from several data stores with credit card information, customer information, and employee information and then made various views of this information available to several different applications for analysis and reporting. This process required strict enforcement of data security policies at the row and column levels. While initially data access occurred via SQL and JDBC, migration to an SOA required some XML-based data exchange. JBoss Enterprise Data Services Platform software made it possible for the bank to implement the data services layer and enabled the appropriate data access and security as well as providing for a later migration to web services.

REPORTING

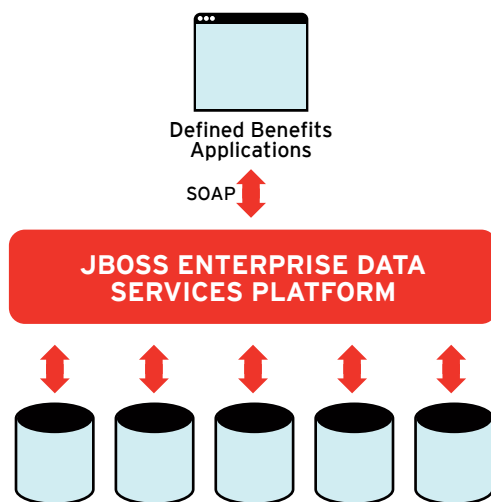
Today the term "reporting" covers a huge array of requirements, from traditional, printed reports and customer statements to self-service portals, dashboards, and mobile notifications. The common thread is information, which is provided to internal users, external customers, or partners in agreed-upon ways that enable action. The challenge is getting the information from myriad sources to the recipients in a timely, consistent way that meets the needs of decision-makers. JBoss Enterprise Data Services Platform can play multiple roles in the reporting "supply chain." Data services help to simplify data access and integration and streamline the process of putting data in the right form and delivering it to a wide range of applications and users.



SOLUTION EXAMPLE:

Investment suitability reporting

The defined contributions group of a top-20 insurance, banking, and asset management institution must conform to SEC Books & Records broker/dealer regulations that require confirmation of certain customer information relevant to suitability of investments and advice provided by the firm. Certain data regarding clients had to be confirmed back to the clients within a specific timeframe and made available to branch offices and licensed representatives. Regulations also mandated certain retention policies and access by federal/state securities regulators. As customers provide and confirm their information, it must be recorded in a write-once/read-many system and made available for access by branch representatives.



JBoss Enterprise Data Services Platform helps developers bridge the gap between relational data sources and diverse Web services-based applications.

To meet regulation deadlines and provide the flexibility needed for a range of access requirements, the company selected JBoss Enterprise Data Services Platform as the core of an information access service through which the customer information could be read or updated. This eliminated the need to create redundant point-to-point interfaces for data access by each of the client applications. In addition, the application team did not have to learn and code for the complexity of the various information sources, and they now have available data access services that can be reused for future projects. Data consumers are isolated from the complexities of source systems and are able to use business nomenclature rather than having to navigate multiple database schemas. In addition, by using JBoss Enterprise Data Services Platform, the company can provide both SQL interfaces and web service interfaces to consuming applications even though most of the underlying data is relational. A number of client application development tools are used, including WSDL to Java, pure Java, and .NET. The suitability data is provided through a single standard set of services usable by any system that needs the information, a process that aids internal dissemination of the information as well as regulatory access.

SOLUTION EXAMPLE:

Hedge fund services

The prime services group of a world-leading financial services company wanted to improve service to its hedge-fund clients. Because clients trade in many different types of instruments, the company needed to assemble information from a number of different sources within the organization. Sources included the derivatives reporting database (an Oracle database), which provides derivatives trade and valuation data. The new services required a rigorous service-level agreement between the prime services group and the group managing the derivatives data.

By using JBoss Enterprise Data Services Platform to create an intermediary data service layer that the prime services application can access via ODBC, the organization is able to better manage service levels and insulate the downstream applications from changes to the physical storage of the derivatives data. In addition, while the derivatives database includes all the derivatives data for the organization, bank policy limits the prime services group's access to only the data relevant to its clients. With data services created using JBoss Enterprise Data Services Platform, team members could easily implement this policy without affecting either the prime services application and data stores or the derivatives data store. Similar challenges were addressed in the areas of data for credit risk monitoring and internal business information for profit and loss (P&L) systems. As a result, data confidentiality policies were enforced through appropriate data filtering, application development and maintenance were streamlined, and it became easier for groups managing upstream data sources to meet their service level agreements.

SOLUTION EXAMPLE:
Insurance case management

The insurance unit of a top-20 insurance, banking, and asset management institution decided to put in place a data services layer that would help provide better customer policy information to customer touch points such as call centers. The institution hoped to improve customer service as well as provide more opportunities for customer cross-selling and up-selling. All reporting applications and web service calls would go through the data services layer. Having data access and integration isolated in this layer would streamline development and maintenance by insulating applications from changes to the data sources. In one project, call center staff and other groups around the company used a portal application and needed to be able to look up policyholder information using wildcard entries for data elements, such as policy number, last name, first name, or zip code.

Developers used JBoss Enterprise Data Services Platform to create web services that translated between the XML format used by the portal application and the native DB2 database containing the policy information. The platform's SOAP API enabled the portal application to send a SOAP message to retrieve results from the DB2 data source with performance sufficient to support real-time interactions with customers.

REALIZE THE FULL POTENTIAL OF YOUR SOA

Many financial institutions have created SOAs for their core systems. Decoupling application components has made development and maintenance much more straightforward. Service-oriented approaches have eased integration with legacy systems and enabled better access to data stored by existing applications. But neither SOA, BPM, nor other integration architectures (e.g., enterprise application integration [EAI]) alone can overcome data integration challenges, especially if not all systems are service-enabled.

JBoss Enterprise Data Services Platform can help you address these data challenges and create a more integrated and agile enterprise, whatever your architectural approach. With JBoss Enterprise Data Services Platform, it is easy to build data services that transform, integrate, and aggregate data to deliver the right forms to the right applications using the right interfaces. By decoupling applications from physical data sources, you can hide the complexity of multiple data sources and reduce the impact on applications when data sources are changed. If you choose, the services you create can be delivered using SOA.





Red Hat's JBoss Enterprise Data Services Platform is a superset of JBoss Enterprise SOA Platform and includes a full-use version of JBoss Enterprise SOA Platform. With support for XML, SOAP, REST, and UDDI, and with the ability to shorten development time, accelerate key projects, and foster reusable, maintainable data services, JBoss Enterprise Data Services Platform can be an important strategic component of your SOA.

JBoss Enterprise Data Services Platform puts your data to work. Whether you are a bank, an investment services firm, or an insurance company, and whether your institution is working to reduce exposure and improve risk management, achieve straight-through processing, create a single view of the customer for better service and marketing, execute mergers and acquisitions more effectively—or do all of these things—JBoss Enterprise Data Services Platform can help you bridge the gap. And as you implement data services for your applications using JBoss Enterprise Data Services Platform, you can be assured that you will streamline application development and maintenance, reduce implementation time, and create an architecture that will benefit both your project and your organization. Your institution will be better able to use valuable information across the enterprise, and better able to respond rapidly to whatever the financial future brings.

FOR MORE INFORMATION

JBoss Enterprise Data Services Platform is part of the JBoss Enterprise Middleware family—a powerful group of open source middleware solutions that can help make your IT infrastructure simple, open, and affordable. For more information on JBoss Enterprise Data Services Platform, visit jboss.com/products/platforms/dataservices. For more information about how JBoss Enterprise Middleware products can help you create a more intelligent, integrated enterprise—including case studies of successful implementations—visit redhat.com/promo/integrated_enterprise.

To learn how Red Hat can address your specific goals and requirements, contact your Red Hat representative.

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