

RUNNING HIGHLY-TRANSACTIONAL APPLICATIONS WITH JBOSS ENTERPRISE APPLICATION PLATFORM

AN OVERVIEW OF DISTRIBUTED TRANSACTION MANAGEMENT AND RECOVERY CAPABILITIES

OVERVIEW

Applications in today's dynamic, highly transaction-oriented business environment require a middleware platform that provides transactional integrity throughout the entire order-to-cash lifecycle. Whether you're building applications to support financial trading, travel reservations, online commerce, or other transaction-oriented businesses, ensuring transactional integrity is a critical requirement for success.

JBoss Enterprise Application Platform 5 provides a robust set of distributed transaction processing, management, and recovery capabilities. In addition to providing a Java EE certified platform, complete with enterprise features for high availability, messaging, enhanced security, and performance, JBoss Enterprise Application Platform 5 includes a mature set of transaction management features that are exercised in some of the most demanding systems in the world.

HISTORY

The transaction manager of JBoss Enterprise Application Platform, commonly referred to as JBoss Transactions, has been used in mission-critical environments since 1986. Based on technologies acquired from Arjuna Technologies, JBoss Transactions is known as the premier open source transaction manager. Over the past 20 years, the core JBoss Transaction engine has been used extensively within the middleware industry. In addition, it has been used to drive multiple transaction and web services standards adopted by standards bodies such as the Object Management Group, the Organization for the Advancement of Structured Information Standards (OASIS) and the Java Community Process.

As a recognized leader in transaction management, JBoss Transactions is the core transaction back-plane for various leading software products such as TIBCO BusinessWorks. Since being open-sourced in 2005, JBoss Transactions has been the core transaction manager for all JBoss Enterprise Middleware products, including JBoss Enterprise Application Platform, and has benefited from a vibrant and active community of users, testers, and contributors.

CASE STUDY: NYSE EURONEXT

In support of the world's largest global financial trading system, NYSE Euronext's requirements for performance, scalability, reliability, and transaction integrity are second to none. With over 3,000 customers using the NYSE Euronext network for critical trading transactions, the exchange needed to keep its trading system operational to ensure its business, as well as its clients' businesses, continued to run smoothly.

Applications deployed and managed by NYSE Euronext must maintain a high degree of transactional integrity and peak performance throughout the trading day. If systems should stall or fail, the world's financial markets could be significantly impacted. NYSE Euronext consolidated its middleware infrastructure by migrating from proprietary and complex application servers to JBoss Enterprise Application Platform on Red Hat Enterprise Linux. By leveraging its JBoss platform to monitor market activity, NYSE Euronext experienced 50-60 percent cost savings as well as a simplified middleware architecture, improved deployment management, reduced failures, and improved reliability.

TRANSACTION STANDARDS & FEATURES

JBoss Enterprise Application Platform 5 supports the Java Transaction API (JTA) as mandated by the Java EE specification. It even goes beyond the Java EE specification by adding support for the the Java Transaction Service (JTS), the CORBA Object Transaction Service (OTS), and web services-related transaction standards such as WS-Coordination, WS-AtomicTransaction, and WS-BusinessActivity.

The distributed transaction engine in JBoss Enterprise Application Platform 5 meets the demand requirements of mission-critical applications by providing transaction management across databases, message queues, and other transaction-aware resources. Core features include:

- Built-in failure recovery that handles failures automatically with no manual intervention
- Simplified application development, which enables programmers to focus on business logic rather than specialist, non-reusable, error-prone failure recovery code
- Complete, distributed transaction support for Java EE and CORBA
 - Support for both flat and nested transaction models with nested-aware resources and resource adapters
 - Reliable coordination and application data consistency for business processes that leverage web services

CASE STUDY: UNION BANK

In banking, transaction reliability and recovery aren't just mission-critical requirements, they're compliance and regulatory mandates. As part of its migration from IBM WebSphere Application Server to JBoss Enterprise Application Platform on Red Hat Enterprise Linux, Union Bank leverages the transaction features of the JBoss Enterprise Middleware platform in its commercial banking operations. These operations include daily cash management applications and Union Bank's core teller platform, which are deployed in over 330 branches located throughout the United States.

Union Bank's move from IBM WebSphere Application Server to JBoss Enterprise Middleware on Red Hat Enterprise Linux resulted in improvements to system availability, scalability, resiliency, ROI, security, provisioning, configuration management, and time-to-market. After migrating to JBoss Enterprise Application Platform, Union Bank reduced overall cost-per-transaction 25 to 40 percent, while still maintaining transaction integrity and reliability throughout its mission critical banking infrastructure.

SUPPORTED CONFIGURATIONS

In addition to the community testing that comes with any successful open source project and decades of mission-critical use, the distributed transaction management functionality in JBoss Enterprise Application Platform is exercised on market-leading configurations with each major, minor, and update release.

JBoss Enterprise Application Platform 5 is certified and supported on databases such as IBM DB2, Oracle, Sybase, Microsoft SQL Server, MySQL, and PostgreSQL. Each database and corresponding database driver receives extensive validation testing to ensure that transaction integrity and state are managed and recovered throughout a transactions complete lifecycle.

LEARN MORE

Numerous resources are available to assist JBoss Enterprise Application Platform 5 users to better understand and leverage the out-of-the-box distributed transaction features. Practical examples covering everything from basic concepts to complex crash recovery scenarios are included in use case-oriented guides covering application development, transaction manager configuration, administration, and failure recovery.

Visit www.jboss.com/products/platforms/application for additional information.



ABOUT RED HAT

Red Hat was founded in 1993 and is headquartered in Raleigh, NC. Today, with more than 60 offices around the world, Red Hat is the largest publicly traded technology company fully committed to open source. That commitment has paid off over time, for us and our customers, proving the value of open source software and establishing a viable business model built around the open source way.

Red Hat provides high-quality, affordable technology to the enterprise. Our solutions are delivered via subscription and range from operating systems and platforms like Red Hat Enterprise Linux and JBoss Enterprise Middleware, to application and management tools, as well as consulting, training, and support.

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ASIA PACIFIC
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www.apac.redhat.com
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LATIN AMERICA
+54 11 4341 6200
www.latam.redhat.com
info-latam@redhat.com