Introducing Red Hat’s JBoss Portfolio

Complete, proven, and scalable open source middleware from Red Hat

Eamon McCormick – Civilian Middleware Specialist

September, 2014
Agenda

- JBoss and open source communities
- The JBoss technology portfolio
- Evolution to Platform as a Service – OpenShift
- Why Red Hat?
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• JBoss and open source communities
  • The JBoss technology portfolio
  • Evolution to Platform as a Service – OpenShift
  • Why Red Hat?
Innovation:
- Occurs in the JBoss/Wildfly/Apache Communities
- Projects release early and often
- 80+ projects with different schedules, versions, dependencies

Challenge:
- Integrate & maintain integrations between multiple projects
- Time intensive/Expensive
- Constant upgrades to receive bug/security fixes
- Community timeframes

Solution: JBoss Enterprise Platforms
- Single, integrated, certified distributions
- Extensive Q/A Process
- Industry-leading Support
- Documentation
- Secure, Production-level Configurations
- Multi-year Errata Policy
While community projects continue to rapidly evolve, enterprise middleware products focus on long term stability.

Enterprise versions provide long-term support, regular releases including fixes, new features, and new platforms certifications.

Dead Community Branches are not maintained and never productized.

New community features may be backported to Enterprise versions.
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The JBoss Integration Solutions
**JBoss Data Grid**

- An in-memory distributed database designed for fast access to large volumes of data and scalability
- Commonly a complementary layer to the database and the application.

**Key JDG characteristics:**

- Built on popular Infinispan
- In-memory, distributed caching
- Elastic scalability
- Advanced querying
- Data replication (cross-site)
- Processing for streaming data
- Transaction capabilities
JBoss Application Integration

A-MQ

Messaging Platform
Integrate applications, devices by notification or exchange of data using multiple protocols in any runtime

Fuse
Integration Platform
Mediate, transform, route and connect between loosely coupled components, services and applications using enterprise integration patterns

Fuse Service Works
Business Services Platform
Develop and choreograph business services, manage lifecycle, define and enforce service policy and monitor service activity
JBoss Data Virtualization – Federate Fragmented Data

Data Consumers
- BI Reports & Analytics
- Mobile Applications
- ESB, ETL
- SOA Applications & Portals

JBoss Data Virtualization

Consume
- Standard based Data Provisioning
  - JDBC, ODBC, REST, SOAP, OData

Compose
- Unified Virtual Database / Common Data Model
- Data Transformations

Connect
- Native Data Connectivity

Data Sources
- Hadoop
- NoSQL
- Cloud Apps
- Data Warehouse & Databases
- Mainframe
- XML, CSV & Excel Files
- Enterprise Apps

Easy, Real-time Information Access
Virtualize Transform Federate
Siloed & Complex
Jboss Platform for Managing Big Data
CAPTURE, PROCESS AND INTEGRATE VOLUME, VELOCITY, VARIETY

- BI Analytics (historical, operational, predictive)
- SOA Composite Applications
- Data Integration JBoss Data Virtualization
- In-memory Cache JBoss Data Grid
- Messaging and Event Processing JBoss A-MQ and JBoss BRMS
- Hadoop
- Structured Data
- Streaming Data
- Semi-Structured Data

Red Hat Enterprise Linux & Virtualization
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PaaS = Platform as a Service

A Cloud Application Platform

1. Code
2. Deploy
3. Run

- Code your app
- Push-button Deploy, and your App is running in the Cloud!
- Save Time and Money

by Red Hat
PaaS Lets You Streamline App Dev

**Craftwork**

**Physical**

**Virtualized**

**Assembly Line**

**With PaaS**

How to Build an App:
1. Have Idea
2. Get Budget
3. Submit hardware acquisition request
4. Wait
5. Get Hardware
6. Rack and Stack Hardware
7. Install Operating System
8. Install Operating System Patches
9. Create user Accounts
10. Deploy framework/appserver
11. Deploy testing tools
12. Code
13. Test
14. Buy and configure Prod servers
15. Push to Prod
16. Launch
17. Order more servers to meet demand
18. Wait...
19. Deploy new servers
20. Etc.

How to Build an App:
1. Have Idea
2. Get Budget
3. Submit VM Request request
4. Wait
5. Deploy framework/appserver
6. Deploy testing tools
7. Code
8. Test
9. Configure Prod VMs
10. Push to Prod
11. Launch
12. Request VMs to meet demand
13. Wait
14. Deploy app to new VMs
15. Etc.

“The use of Platform-as-a-Service technologies will enable IT organizations to become more agile and more responsive to the business needs.” —Gartner*

*JBoss by Red Hat*
OPENSHIFT IS PAAS BY RED HAT

ELASTIC CLOUD APP PLATFORM

✓ SELF-SERVICE
✓ AUTOMATIC PROVISIONING
✓ CI/CD
✓ AUTO-SCALING
✓ SECURE
✓ MULTI-LANGUAGE
✓ ENTERPRISE-GRADE
✓ BUILT ON RED HAT
RED HAT’S PAAS STRATEGY

Open Source PaaS Project

Public PaaS Service

On-premise or Private PaaS Software

OPENSHIFT

ONLINE
by Red Hat®

OPENSHIFT
ENTERPRISE
by Red Hat®
An OpenShift Broker Manages Multiple OpenShift Nodes which run containers called Gears
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## Customer Success with Red Hat JBoss

<table>
<thead>
<tr>
<th>Client Name/Description</th>
<th>Business/Technical Challenge</th>
<th>Solution and Result</th>
</tr>
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</table>
| **Sabre Holdings**      | • Quickly connect travel suppliers  
                          • Isolate mainframe apps from consumers  
                          • Distribute integration solution across many locations | • **JBoss A-MQ** connection to suppliers supporting **1.4B messages/day**  
                          • Decoupled apps, services, suppliers  
                          • Saved **millions**  
                          • Achieved 14 consecutive months of uptime |
| **Federal Aviation Administration** | • Streamline exchange of data among FAA, industry, airlines  
                          • Need to increase capacity | • **JBoss Fuse** for SOA and service monitoring  
                          • Support **30K controllers, 50K aircraft/day**  
                          • Near **100% uptime**  
                          • Flexibility for change |
| **Large US-Based Regional Bank** | • Manage thousands of loans in-process  
                          • Must fund loans faster  
                          • Management visibility and control  
                          • Loan data across multiple sources | • Created “virtual data mart” with **JBoss Data Virtualization**  
                          • **Real-time** data access to loan workflow system, and management portal  
                          • Process loans **faster**, more **securely** |
# More Customer Success with Red Hat JBoss

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<tbody>
<tr>
<td><strong>Chicago Board Options Exchange</strong></td>
<td>• Require extremely fast access of data by multiple applications</td>
<td>• <strong>JBoss Data Grid</strong> to hold discrete, temporal data for real-time read access</td>
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<td>• Must reduce failure recovery time significantly</td>
<td>• Supported data synchronization across apps and sessions</td>
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<td>• Must synchronize critical trading data across sessions</td>
<td>• Reduced outage recover time from minutes to &lt; 1 second</td>
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<td>• Meet SLA of &lt; 2 second response time to load information</td>
<td>• <strong>Jboss Data Grid</strong> improved load time from 10 seconds to &lt; 2 seconds</td>
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<td>• Achieve stability and scale through back-to-school traffic spikes</td>
<td>• Achieved 0 downtime</td>
</tr>
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<td>• Provide seamless end-user experience between web and mobile clients</td>
<td>• Delivered single data store supporting web and mobile apps</td>
</tr>
<tr>
<td></td>
<td>• NA</td>
<td>• <strong>Jboss EAP</strong> delivers 569% ROI with payback &lt; 6 months</td>
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<td>• Organizations created 51% more applications per year with EAP</td>
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<td>• <strong>TCO</strong> per year with Jboss EAP roughly ½ of legacy solutions</td>
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Additional Slides For Reference
## JBoss Data Grid

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<th>JDG Provides...</th>
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<tr>
<td>Deliver applications that handle incredibly high transaction volumes</td>
<td>• In-memory distributed caching&lt;br&gt;• Data closer to applications&lt;br&gt;• Elasticity using Commodity infrastructure</td>
</tr>
<tr>
<td>Deliver availability to meet high uptime requirements</td>
<td>• Replication for high availability and redundancy&lt;br&gt;• Horizontal and vertical scalability</td>
</tr>
<tr>
<td>Deal with data across datacenters and the Cloud</td>
<td>• Advanced querying and transaction support&lt;br&gt;• Schema-less key/value store for unstructured data&lt;br&gt;• Processing for streaming data&lt;br&gt;• Replication within/across sites, and Cloud</td>
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<tr>
<td>Separate applications from complex, rigid data tier</td>
<td>• Compatibility with Java and non-Java platforms&lt;br&gt;• Straight-forward programming for access and use of data&lt;br&gt;• Decouple application, database, and data grid for independent lifecycles</td>
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“Although the in-memory data grid (IMDG) market, a key IMC segment, is small, it is likely to grow fast and to reach $1 billion by 2016.” - Gartner
## JBoss Integration - A-MQ, Fuse, Fuse Service Works

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<th>Customer Need/Issue</th>
<th>JBoss Integration Technologies Provide...</th>
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| Connect systems and info that live within, and outside the datacenter | • Lightweight integration stack based on **Apache Activemq** and **Apache Camel**  
• Deploy both edge and datacenter components (devices, remote offices, vehicles…) |
| Create new capabilities without heavy coding, legacy changes, and duplication | • Visually creation **composite applications**  
• 150+ built-in Enterprise Integration Patterns to reduce custom code, and achieve standardization |
| Manage capabilities as end-to-end business services | • Design governance managing creation, delivery, lifecycle of services and business processes  
• Runtime governance managing end-to-end SLAs  
• Management tools deliver visibility and control |
| Eliminate barriers to integration: protocols; data formats; and client platforms; vendor lock-in | • Integration of apps/devices by notification and data exchange.  
• Support for multiple protocols, any runtime, multiple data formats  
• All built on proven, popular, innovative open source projects |

“Fuse presented a ready framework that could deliver very rapid results. It was a perfect solution or our organization.” - Hermes
## JBoss Data Virtualization

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<th>JDV Provides...</th>
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| Extracting, moving, duplicating data adds latency and cost | • Virtual data modeling connecting disparate sources: RDBMS, files, Cloud data, SAP, file-based, Hadoop, Mainframe…  
• Improved control and reduced costs. |
| Every project solves data access and integration differently | • Compose virtual data models specific to a project or consumer.  
• Maintain flexibility without impacting data sources. |
| Applications are tightly coupled to specific data sources | • Abstract delivery of data from the source.  
• Single point of security and control.  
• Simplification of data access from within applications. |
| Difficulty providing data for new applications and analytics | Support new needs (analytics, applications, compliance) without:  
• duplicating data  
• Modifying data sources  
• connecting to multiple sources. |

“Data is becoming the new raw material of business: an economic input almost on par with capital and labor. Every day I wake up and ask, ‘how can I flow data better, manage data better, analyze data better?’”  
– CIO – Wal-Mart