

RED HAT JBOSS FUSE SERVICE WORKS

TECHNOLOGY OVERVIEW

FEATURES

- Enterprise integration pattern-based development
- High-performance messaging
- Easier web services and REST implementations
- Lightweight structured service development
- Service life cycle management
- Business transaction monitoring
- Service orchestration
- Rules processing
- Cloud-ready architecture

Red Hat® JBoss® Fuse Service Works is a service design, development, and integration platform. JBoss Fuse Service Works includes applications and code from several popular open source projects that are fully integrated, tested, and supported so that you can take advantage of community-powered innovation with the security of enterprise-grade tools and services. With user-friendly tooling, structured service development, enterprise integration pattern-based development, multiple connectivity options, and business service life cycle management, you can simplify integrations and complete mobile, BPM, and cloud projects more quickly and easily.

BUSINESSES NEED UNIFIED INFORMATION

Business information is spread across disparate enterprise applications and needs to be integrated to create a holistic solution. Enterprise applications can include packaged or COTS applications, custom-built applications, services, and devices hosted in heterogeneous environments like physical, virtual, mobile, and cloud. In addition, evolving business challenges require solutions that are quick to build, flexible, and easy to manage and maintain.

Red Hat JBoss Fuse Service Works provides a service foundation and integration platform that helps enterprises to easily create modular business services that are reusable, changeable, flexible and which hide the complexity of integrating with multiple enterprise systems.

FUNCTIONAL COMPONENTS

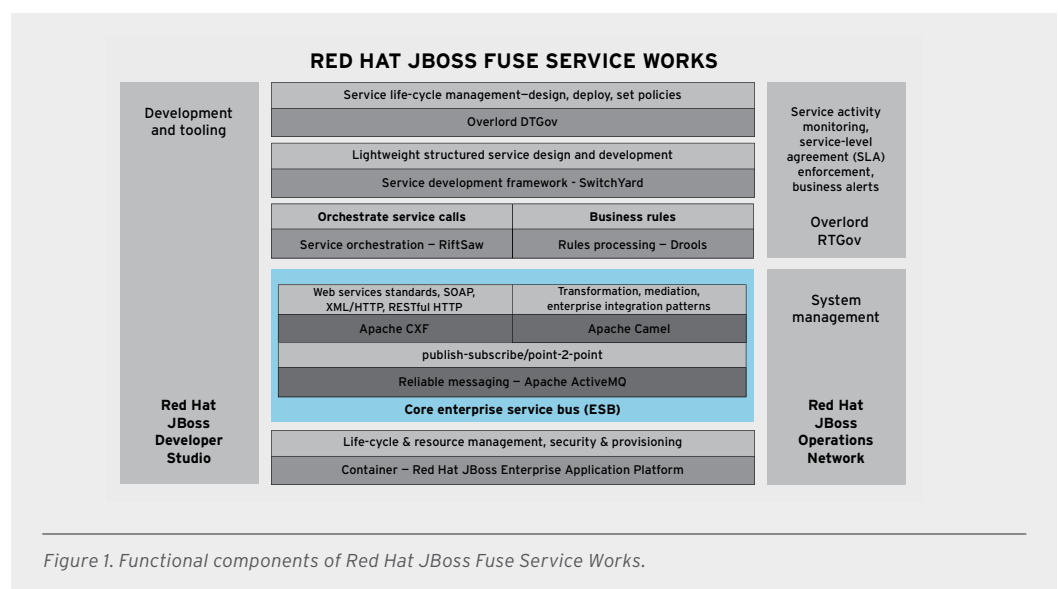


Figure 1. Functional components of Red Hat JBoss Fuse Service Works.



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BENEFITS

- Faster time to solutions
- Easier and faster access to enterprise assets
- Connect all enterprise assets for automated and efficient solutions
- Increase business agility
- Improve quality of IT service
- Improve IT responsiveness
- Easier and faster mobile, BPM, and cloud projects
- Easier transition to open hybrid cloud architecture

The functional components of JBoss Fuse Service Works include:

- **Container** – Core container capabilities like life cycle management, resource management, security, provisioning, and clustering are provided by Red Hat JBoss Enterprise Application Platform.
- **Core enterprise service bus (ESB)** – Core enterprise service bus capabilities like integration framework, webServices framework, messaging platform enables organizations to integrate and connect information.
- **Service orchestration and business rules processing** – BPEL or BPMN2 based service orchestration capability enables controlled and automated execution of business logic. And business rules processing capability provides enhanced decision based integration routing.
- **Structured service development framework** – Lightweight composite service development framework improves developer productivity, promotes code reuse, and lets developers focus on business logic and not the underlying implementation details.
- **Service delivery life cycle management** – Design time service governance capability enables control of business services which promotes code reuse as well as improves the overall quality of IT services.
- **Business transaction monitoring** – Service execution activity monitoring or runtime service governance capability improves visibility into business service execution and creates a more responsive IT.
- **Operations management and monitoring** – Systems management and monitoring capabilities are provided by the Red Hat JBoss Operations Network.

CONTAINER

CONTAINER LAYER

FEATURE	BENEFIT
Modular architecture Use only the services-driven set of components that are needed.	Better control over services Simplifies application deployment in different environments.
Cloud-ready architecture Move applications to a Platform-as-a-Service (PaaS) solution including OpenShift.	Increased enterprise capabilities Streamline the application service delivery process, increase developer efficiency and agility. Efficiently use application infrastructure across multiple environments.
Developer framework and tooling Support Use a variety of frameworks, including Java™ EE6, along with open source development tools like Maven and Hudson.	Increased developer productivity Improve productivity through the use of open source development tools and frameworks.
Hot deployment Deploy or update services while container is running.	Increased system availability Change an integration service without affecting other services or endpoints.

With Red Hat Consulting, integrate your systems in a way that's manageable and scalable. Get off to a good start, and quickly realize performance and cost benefits and mitigate risk.

“Customers have found professional support services can dramatically magnify the benefits of the open source technology system. Expert support services can provide faster problem resolution, innovative consultation, lower corporate risk, and more individualized services.”

JBOSS ENTERPRISE MIDDLEWARE,
BY RED HAT: PROVEN TECHNICAL
SUPPORT SERVICES LEADER,
JBOSS ENTERPRISE MIDDLEWARE
CUSTOMER SUPPORT STUDY.
VELOCITY PARTNERS, 2012

FEATURE	BENEFIT
Security framework Access control through Java Authentication and Authorization Server (JAAS), secure sockets layer (SSL) encryption, and plug-in points to support custom and third-party authentication providers, firewalls, proxy servers, HTTP(s) tunneling, and DMZ products.	Simplified security administration Use a single security framework along with security standards such as security assertion markup language (SAML), WS-Trust, and simple and protected GSSAPI (generic security service application program interface) negotiation mechanism (SPNEGO) or Kerberos.protected GSSAPI (generic security service application program interface) negotiation mechanism (SPNEGO) or Kerberos.
Clustering and failover Share loads across containers in a cluster. Avoid single point of failure and scale horizontally.	Increased system availability Scale deployments to support large numbers of messages, users, and applications, with high performance and high availability.

INTEGRATION AND WEB SERVICES FRAMEWORK

CORE ENTERPRISE SERVICE BUS LAYER

FEATURE	BENEFIT
Enterprise integration router Use Apache Camel to provide a full-featured, easy-to-use, and intuitive framework for integration.	Go from diagram to deployment Prototype and test enterprise integration patterns in a fluent Java domain-specific language (DSL) or through inversion of control (IoC) using Spring-based deployments.
Web services Use simple and intuitive Java API for XML web services (JAX-WS)-compliant web services stack.	Reduces development time Use web service definition language (WSDL)-first or Java-first creation of web services.
RESTful services Easy-to-use and intuitive Java API for RESTful web services (JAX-RS) front end.	Reduces development time Simple Java-first development of RESTful services.
JMS service Full-featured Java Message Service (JMS) 1.1-compliant broker and client infrastructure.	Integrates with existing IT infrastructure Supports asynchronous communication between services within the ESB or from outside the ESB.
Extensive connectivity Uses Apache Camel to provide connectivity to external applications with connectors for Java database connectivity (JDBC), FTP or SFTP (secure file transfer protocol), HTTP or HTTPS, File, and many more.	Broader integration Simplifies integration with many diverse sources and targets

MESSAGE BROKER

CORE ENTERPRISE SERVICE BUS LAYER

FEATURE	BENEFIT
Cross language clients Provides connectivity from client programs written in languages other than Java.	Supports many development environments Allows native connectivity from applications written in non-Java languages like C or C++.
Pluggable transports Multiple transport protocols for exchanging data between the broker and client, or between multiple brokers.	Supports many networking environment Flexibly meets the demands of different networking environments and use cases.
Flexible persistence Supports a variety of persistence options, from no persistence at all, to using a JDBC database directly, to enabling high-performance persistence using the journal plus a JDBC database. Long-term persistence is enabled through a JDBC-compliant storage database.	Balances reliability and performance Allows the user to maximize reliability and performance for individual applications.
REST API A technology-neutral, web-based API to the message broker service.	Simplified integration Easily integrates with RESTful web services.
Ajax support Supports streaming to web browsers using pure DHTML.	Increased integration options Allows web developers to use the browser as a messaging client.
JMS streams for very large messages When sending extremely large messages, JMS streams eliminate the bottleneck that would occur as the JMS client tries to keep a message bigger than 1GB in memory.	Supports application scalability Allows the messaging platform to deliver truly massive files (many GBs) across the network in a reliable manner.
Message compression GZIP compression allows highly verbose messages to be compressed.	Supports application scalability Message compression helps organizations efficiently transport large amounts of data encapsulated in simple object access protocol (SOAP) and other extensible markup language (XML) formats.

STRUCTURED SERVICE DEVELOPMENT FRAMEWORK

FEATURE	BENEFIT
Simplified and structured development framework Design and develop at high-level service abstraction. Configuration-driven development.	Reduced development cost Simple and intuitive service implementation allows faster development and easier maintenance.
Hide technical complexities Ability to develop Apache Camel routes, messaging services, business process execution language (BPEL) services, and business process model and notation (BPMN) services. Also combines the logic in a high-level service.	Faster time to solution Faster and better service implementations.
Policy-driven capabilities Configure transactions and security via policies.	Cleaner and flexible integration logic Policies can be defined and configured independent of integration logic.
Declarative transformations Smooks, extensible stylesheet language transformations (XSLT), Camel Routes, plain old Java objects (POJO)	Cleaner and flexible integration logic Type-aware runtime automatically invokes transformations as necessary, keeping the integration logic clean and flexible.
Lightweight testing framework Test applications during development without requiring the entire container.	Reduced development cost Embedded test kit allows integration solutions to be tested interactively during development. This promotes iterative development of integration services, allowing errors to be caught and fixed early.
User-friendly tooling Intuitive and easy-to-use visual tooling that complements service development capabilities.	Faster time to solution Visual, easy-to-understand, easy-to-learn, rapid application development tools enable quicker integration solutions and simplify maintenance.

SERVICE ORCHESTRATION AND BUSINESS RULES PROCESSING

FEATURE	BENEFIT
Service orchestration BPEL-based service orchestration based on RiftSaw. Support for BPMN-based service orchestration.	Automate integration logic Controlled and automated execution of business logic. Easily identify and process errors in the execution of business logic.
Rules processing Drools-based business rules processing for content-based routing and ESB use cases.	Specialized decision-based routing Enhanced decision-based integration routing.

SERVICE DELIVERY LIFE CYCLE MANAGEMENT

FEATURE	BENEFIT
Service repository artifact model and protocol (S-RAMP)-based repository Organization for the Advancement of Structured Information Standards (OASIS)-based repository for shared services.	Standards-based repository Standards-based repository for shared service artifacts which promotes code reuse within the organization.
Development life cycle management Define and manage service artifact life cycle (design, develop, test, deploy).	Better quality of IT services Manage the development and deployment of shared services across teams.
Web-based user interface Intuitive web-based user interface helps define workflows, and view and manage service artifacts.	Quicker adoption Easy-to-learn and easy-to-use interface leads to quicker adoption.
Ability to manage relationships Define and understand the relationships between shared artifacts.	Analyze impact of changes Analyze the impact of changes to business services or integration solutions and plan accordingly.
Multiple versions of artifacts Supports multiple versions and relationships of service artifacts.	Flexible solutions Different versions of the same service can be used concurrently to support iterative implementation. This improves the overall quality of the solution.
Customized and automated workflows Use pre-built workflows or create customized workflows.	Promotes code reuse Automated workflows promote code reuse within the organization.

BUSINESS TRANSACTION MONITORING

FEATURE	BENEFIT
Monitor business level events Monitor and trace business service execution. Automatically correlate business service executions.	Better support Drill down into service execution metrics to analyze issues and plan for improvements, in order to provide better support to the business and create a more agile enterprise.
Define SLA and runtime policies Define service-level agreements (SLA) and runtime policies independent of service implementation.	Meet business operations goals Configuration-driven policy definitions enable organization to meet business operations goals.
Enforce SLA and runtime policies Enforce defined runtime policies with customized alerts.	Promotes responsiveness Promotes responsive IT services.
Highlight situations with alerts Define alerts and highlight operational alerts.	Agile and responsive enterprise Access to operational alerts promotes an agile and responsive enterprise.
Interface with operations monitoring Policy notifications and alerts can interface with Red Hat JBoss Operations Network.	Better support Service activity alerts can be combined with system alerts for improved operational analysis and prediction.

ADDITIONAL RESOURCES

Download Red Hat Middleware products

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Download now: jboss.org/products/

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Explore the various resources and get up to speed fast. View a webinar, tune in for a tutorial, watch a demonstration, and more.

Learn more: redhat.com/products/jbossenterprise-middleware/fsw (New link)

GET INVOLVED

Open source software belongs to you. Blog, join a user group, contribute code, or test upcoming releases.

Join us: jboss.org/contributeapache.org

OPERATIONS MANAGEMENT AND MONITORING

FEATURE	BENEFIT
Monitoring and alerting Provides integrated realtime and historical monitoring of performance and availability, automatically calculated historical baselines, and integrated alerts and notifications.	Simplifies monitoring Centralized and advanced monitoring of performance and availability for applications and services allows the identification of issues before they impact customers and businesses.
Application provisioning, rollback, and history Centralized application provisioning, rollback, and history of application servers, applications, configurations and other resources.	Simplifies application release management with support for application provisioning and patching Accelerates provisioning and deployment, standardizes deployments across all development, testing, and production environments, and manages change by maintaining an audit trail of all deployments and upgrades.
Container runtime details Provides information about container instances, including the services they host, the location of service endpoints, and the status of all services and endpoints.	Supports node auto-discovery Services or consumers can discover services available anywhere in the cluster without needing to know specific location information.

RED HAT JBOSS FUSE SERVICE WORKS SPEEDS UP CLOUD INTEGRATION

With the modern enterprise integration pattern-based development framework, a lightweight structured service development framework, and cloud-ready architecture, Red Hat JBoss Fuse Service Works simplifies the design, development, management, and maintenance of integration solutions and helps organizations transition to open hybrid cloud architecture.

ABOUT RED HAT

Red Hat is the world's leading provider of open source solutions, using a community-powered approach to provide reliable and high-performing cloud, virtualization, storage, Linux, and middleware technologies. Red Hat also offers award-winning support, training, and consulting services. Red Hat is an S&P company with more than 70 offices spanning the globe, empowering its customers' businesses.



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