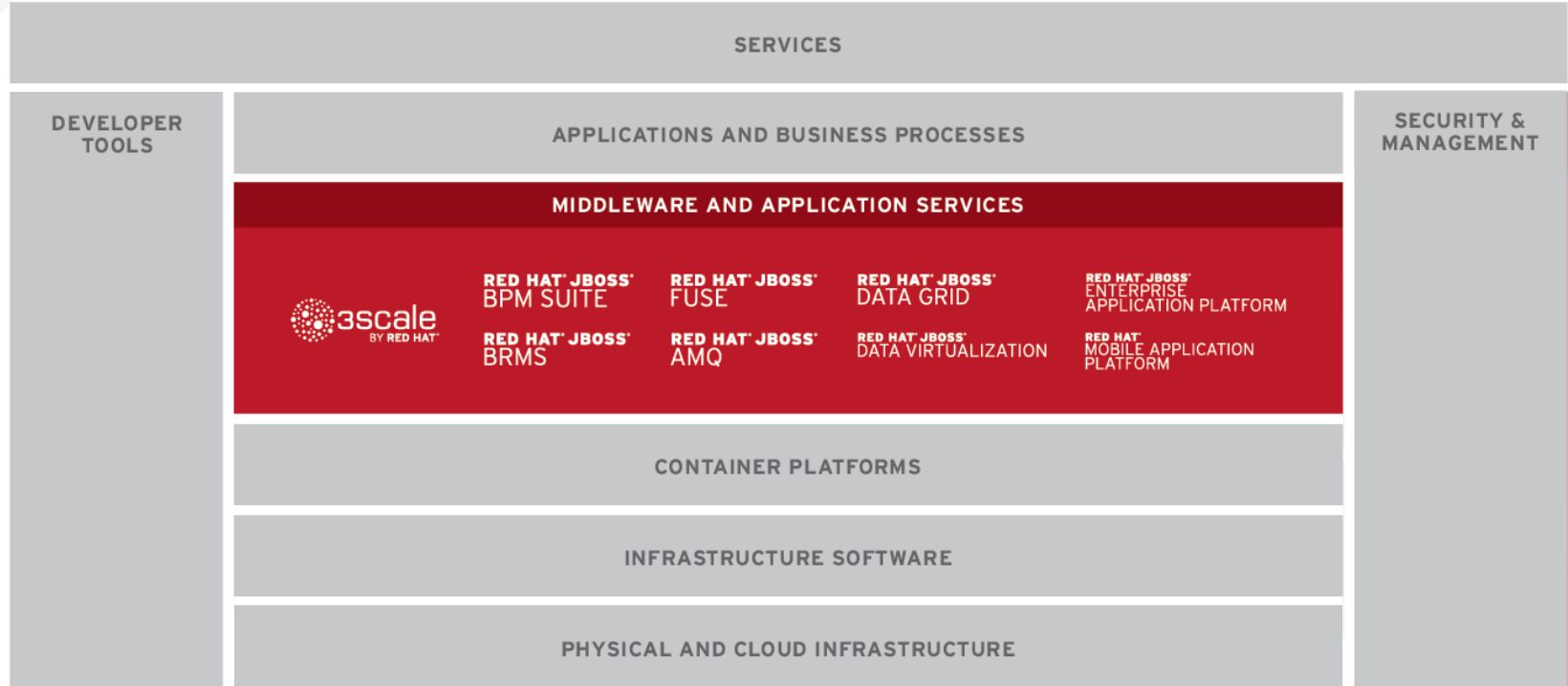


Middleware – Quo Vadis?

Robert Baumgartner
Senior Solution Architect
24. Oktober 2017

It'S All There!

Complete Technology Stack For Hybrid Cloud



RH0075-03

JBoss EAP 7

Developer Productivity

- IDE for Java EE 7 Development
- Modularity Enhancements
- Backwards Compatibility / Interop.
- Tested Frameworks

Operational Efficiency

- Management Enhancements
- Batch Utilities
- Web Console Enhancements
- HA / Performance Enhancements
- Interop. (JDG, A-MQ, RH-SSO, JBCS Web)
- EUS / z-stream support (starting in 7.1)

Technology Trends

- Java EE 7 / Java SE 8
- Cloud : xPaaS / EC2 / Azure
- Messaging Consolidation
- Modern Web Applications, HTTP/2 (7.1+)
- Security Enhancements - Elytron (7.1+)
- EJB Client Simplifications (7.1+)
- Java SE 9 (subject to availability)

JBoss EAP 7.1 - Q4 2017

- Domain Enhancements - Auto-reconnect, Performance, new LB profile
- Management and CLI/Web Console Enhancements
- Listeners and JMX Listener for Server Life Cycle Events
- Messaging Enhancements
- HA Singleton MDB, Journal JDBC Store on Oracle DB, AMQ 7 integration
- Graceful / controlled shutdown and Server Suspend (for Transactions), Graceful Start
- HTTP/2 HTTPS/2 support
- EJB Client, Security Simplifications w/ the new alternative Security subsystem - Elytron
- Transaction metrics / monitoring JMS and JCA Resources
- Performance Tuning Guide
- Windows Server 2016/ SQL Server 2016 / Sybase 16 / Maria DB Galera Cluster / WMQ 8
- EJB / JNDI over HTTP(s) with HTTP Load Balancers(TP)
- EUS / z-stream support

Beyond Java EE

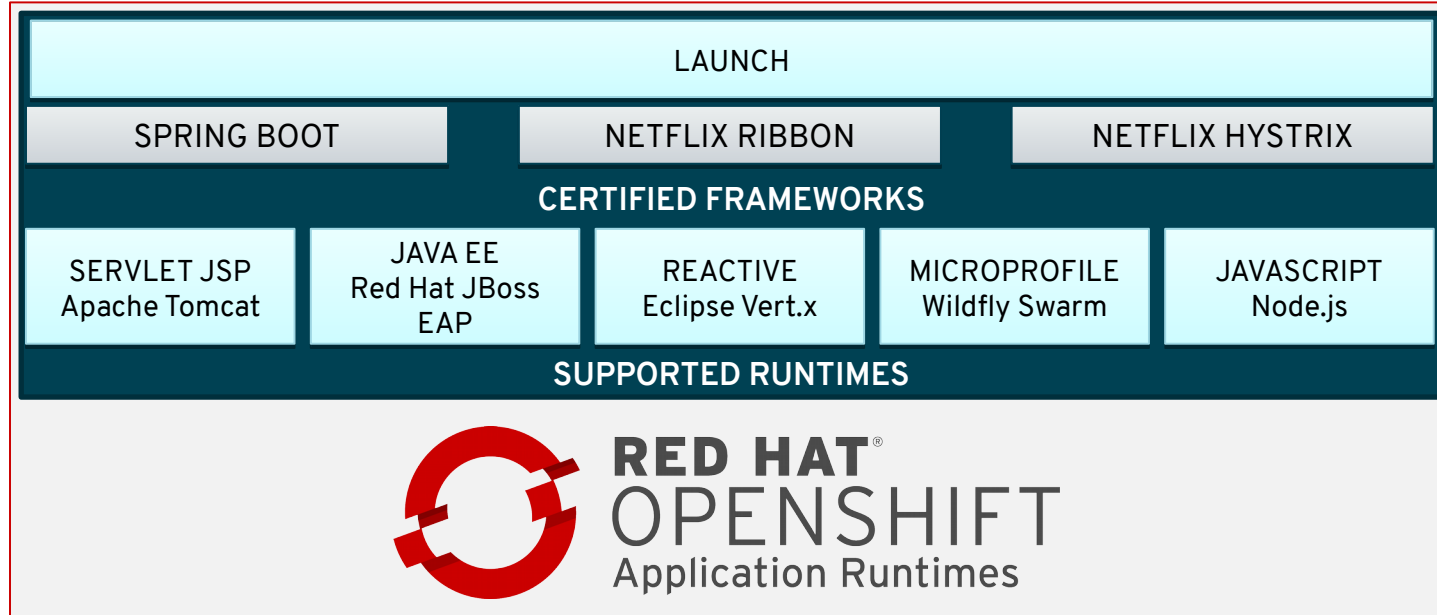


- Wildfly community sub-project
- Focus on both Java EE and MicroProfile microservices
- Immediate goal – Optimize for OSO 3, Dev. Preview for Summit



- Reactive Toolkit for the JVM
- Asynchronous and event-driven
- Excels at low latency and high-throughput applications
- Polyglot - supports many JVM-based languages
- Optimize for OSO 3, Dev Preview for Summit (Java language only)

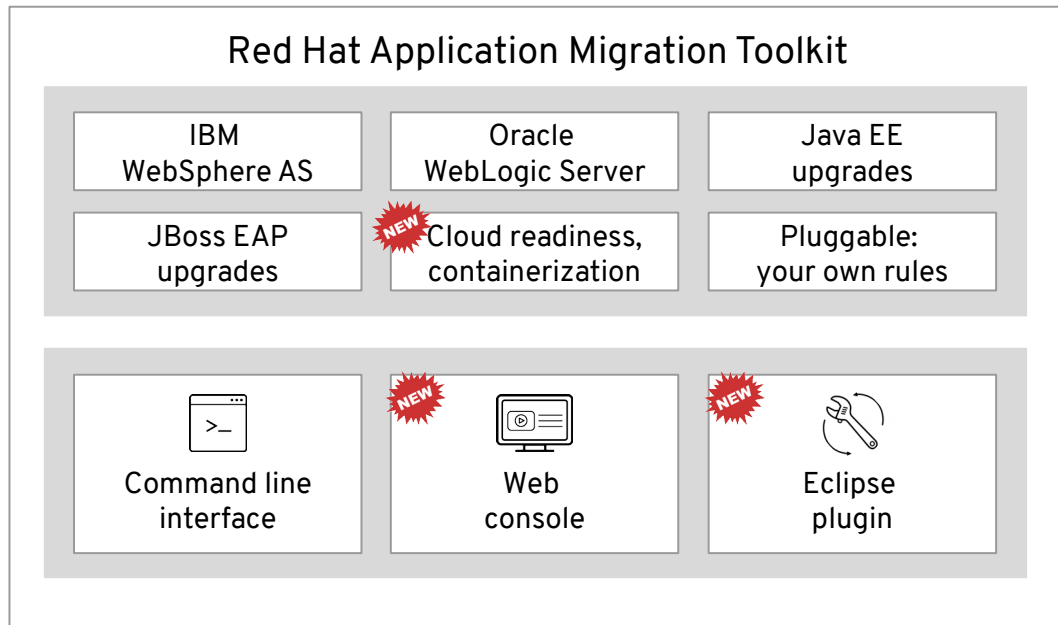
Cloud Native Application Development & Modernization Runtimes (Beta 10 2017)



RED HAT® APPLICATION MIGRATION TOOLKIT

Catalyze large scale application modernizations and migrations

- Automate analysis
- Support effort estimation
- Accelerate code migration
- Free & Open Source



JBoss Data Grid 7 - Key Themes

Real-time Analytics

- Big, Fast Data
- Distributed Streams
- Apache Hadoop and Spark Integration
- Remote Task Execution
- eg. fraud detections, liquidity risk

Polyglot Support

- node.js HotRod client (TP)
- C++, C# HotRod client enhancements
- JavaScript task executors

Ease of use

- New Admin Console
- Remote Task Management
- Controlled shutdown / restart

JBoss Data Grid 7.1 (Q2 2017)

Core

- Performance enhancements
- Streaming large objects over Hot Rod
- Session externalization from JWS (Tomcat) to JDG cluster, Spring Session support

Ease of use

- Admin Console for JDG Server in Standalone mode

Real-time analytics

- Apache Spark 2.0 integration (in addition to Spark 1.6 from JDG 7.0)

Polyglot Support

- C++, C#, node.js HotRod client enhancements

JBoss Data Grid 7.2 (Q4 2017)

Core

- Data management: Store in JSON format
- Security: Fine-grained authorization
- Querying: Full-text querying in client-server mode
- Persistence: Ceph cache store

Real-time analytics

- Change data capture (Debezium)
- Apache Zeppelin integration

Ease of use

- Distributed data structures - counters, multimap
- Stateful auto scale-out on OpenShift

Core Services

What is it ?

- A more convenient and streamlined way to deliver common components without coupling them to JBoss EAP's release cadence and lifecycle.

Who gets it ?

- All Middleware SKUs except JWS*.
- Roadmap
- JON 3 - already available and receiving regular maintenance
- RH-SSO 7
- Apache HTTPD - April (EAP 7 GA)
- Jsvc - April (EAP 7 GA)
- Connectors (ISAPI and NSAPI) April (EAP 7 GA)

*formerly EWS

Red Hat SSO

What is it ?

- Standards-based web single sign-on (SAML, OpenID Connect, OAuth)
- Allows users to authenticate once and seamlessly access numerous related resources

Who gets it ?

- Middleware customers via Core Services
- OpenShift Enterprise, Red Hat Mobile, RHEL OSP Customers

Roadmap

- Red Hat SSO 7.1 (GA - Q1 2017)
- Based on Keycloak 2.3
- OpenID Connect certified
- RHEL 7.3 - RPMs and integration with SSSD
- Fuse and node.js client adapters

JBoss Management

- JBoss ON 3.3 lifecycle is being extended to 2020 in order to facilitate migration to new solutions
- The JBoss middleware manager for CloudForms with CloudForms 4.2
- GA availability of the middleware manager is planned with CloudForms 5.0
 - EAP 6 & 7 are committed
 - Fuse & JDG are priorities for inclusion
 - Entire MW portfolio to be covered over time
- Middleware manager for CloudForms roadmap

3scale API Management Platform

APM v2.1 - GA Q4 2017

- Admin portal SSO
- OpenID Connect with RHSSO
- Wildcard domain routing
- On-prem upgrade process
-

AMP v2.x - 3-6 months releases

- API Gateway and policy extensions
- APIcast OOTB policies
- Multi tenancy for on-premises
- Billing for on-premises
- Versions and environments
- Audit trail
- API lifecycle management
- OAS 3.0 in ActiveDocs
- [...]

3scale Full Open Source

- 3scale Gateway code is already open source
- This release will add the full management system inc. analytics, dashboards, use management etc.
- Estimated Date: H2 2018

3scale SaaS Service

- Continued incremental feature enhancement
 - Source for periodic on-prem software distribution releases
 - Latest updates notifications available here:
<https://access.redhat.com/articles/310744>
- 1

Integration Platform as a Service (iPaaS)

What is it ?

- **iPaaS:** A new web-based tool chain, delivered as-a-Service (hosted by Red Hat), that allows “citizen technologists” to build, deploy and run integration apps in containers on OpenShift.
- **Fuse Integration Services (FIS):** An updated CLI and Eclipse-based tool chain, delivered on premise, that allows technical developers to:
 - Build, deploy and run integration apps in containers on OpenShift
 - Assist/support citizen technologists
 - Developer preview via OpenShift Online. Details are still in planning.

Roadmap

- Demonstrated at Red Hat Summit in May.
- Initial developer preview Sept 2017 via OpenShift Online.
- Continued delivery of updates through 2017 toward GA in Q1 2018
- GA of iPaaS will be at Fuse 7 GA.

JBoss Fuse

Fuse Integration Services 2.0

- Java image updated to support Spring Boot and Camel 2.18
- Karaf image updated to align with Fuse 6.3
- Standardized on s2i build workflows: source and binary
- Support for multiple deployment options (On-prem, dedicated, online/hosted)

Fuse Integration Services 2.x

- Updates corresponding w/iPaaS dev preview

Fuse v7 - Target Q1 2018

- Hosted (iPaaS) developer tooling
- Fabric → OpenShift transition
- A-MQ 7, Messaging-as-a-Service integration
- EAP 7 support
- Deeper 3scale integration

JBoss AMQ

AMQ v7 GA: May 2017

- ActiveMQ Artemis core
 - Multi-protocol: AMQP 1.0, MQTT, HQ Core, OpenWire, STOMP, Websockets; JMS 2 API support
 - Consistent Java broker implementation across EAP 7 and standalone AMQ 7
- New Interconnect Router component (RHEL-only)
 - Message router, not broker. Does not take ownership of messages.
 - Works standalone to provide low-latency brokerless messaging. Integrates with broker for store-and-forward
- Clients
 - AMQP 1.0 clients: Java JMS, C#, Python, C/C++, JavaScript/Node.js
 - Backward compatibility: MRG-M 3.2 AMQP 1.0 clients, A-MQ 6.X clients and HornetQ clients

AMQ V7 - Messaging as a Service - Preview Q4 2017

- Java Broker + Interconnect + OpenShift for elastic, scalable messaging

AMQ V7.X - Updates on ~6 month basis, with async updates for patches and individual components

- Large message support, performance enhancements, broker security plugins
- Improved bridging to 3rd-party brokers, certification in AWS, Azure, Google Cloud

JBoss Data Virtualization

Data Virtualization Service

- Data API
- only expose necessary data based on the needs of an end user
- Data “gateway” service to off-PaaS databases and other data stores
- Data Services
- Simplified data access for microservices
- OData v4

DVS Updates

- Data Virt + Data Grid integration: Q2/2017
- Web tooling for creating data services: Q3/2017

JDV v6.4 - H2 2017

- Based on EAP 6.4
- Updated and new data source support – including PrestoDB, Couchbase, OSISoft PI
- Improved integration with JBoss Data Grid
- Simplified web-based tooling (tech preview outside OpenShift)

Long-term JDV Roadmap

- V6 support lifecycle extension (full support through Jan 2018, maintenance through Jan 2020)
- Tighter alignment with OpenShift
- Focus on supporting Intelligent Applications

JBoss BRMS

BRMS v6.4

- Maintenance/fixes
- Select RFEs
- Support for EAP 7
- Final v6 minor release
- Long term maintenance

Decision Service and Authoring Service

- Scalable Execution Server for OpenShift
- Rules Authoring and Management service for OpenShift
- Dedicated node for each customer account

BRMS v7.0 -Q1 2018

- Decision Model & Notation (DMN) v1.1 Execution support
- Business analysts friendly decision tables and nested table authoring
- Multi-user collaborative development space
- Planner partitioned search & templates.
- Business analysts appealing user experience improvements

BRMS v 7.1 – Q2 2018

- Support for DMN Authoring
- Limited support for PMML authoring
- Rules Simulation and Impact analysis

JBoss BPM Suite

BPM v6.4

- Maintenance/fixes
- Select RFEs
- Support for EAP 7
- Final v6 minor release
- Long term maintenance

Intelligent Process Service, Modeling and Management Services

- Scalable Process execution server (runtime) container image for OpenShift
- Collaborative Modeling Service image for OpenShift
- Process Management and Administration image for OpenShift.

BPM v7.0 – Q2 2018

- End to end user experience
- Citizen developer targeted business app development framework
- Dynamic Case Management
- Enhanced modeling experience for business analysts
- Multi-user collaborative modeling environment
- Integrated scalable execution environment for rules, processes and planner
- Integration with Red Hat Mobile Platform



redhat.®



RED HAT **FORUM**

Europe, Middle East & Africa

JBoss Enterprise Application Platform (EAP)

PRODUCT OVERVIEW

Red Hat® JBoss® Enterprise Application Platform (JBoss EAP) is the market-leading open source platform for next-generation Java™ applications deployed on premise, virtualized, or in private, public, or hybrid cloud environments.¹ JBoss EAP supports a wide range of Java applications, from HTML5 mobile applications to highly transactional applications that use the Java Enterprise Edition (Java EE) programming approach.

CORE FEATURES & BENEFITS

- FULL JAVA EE DEPLOYMENT IN THE CLOUD
- FLEXIBLE MANAGEABILITY
- WORLD-CLASS DEVELOPER PRODUCTIVITY
- ENTERPRISE PERFORMANCE AND STABILITY
- DEVOPS ENVIRONMENTS WITH CONTINUOUS DEVELOPMENT, TESTING, AND INTEGRATION

More Information

- Datasheet

<http://www.redhat.com/en/resources/red-hat-jboss-enterprise-application-platform-deployment>



JBoss Enterprise Web Server (EWS)

PRODUCT OVERVIEW

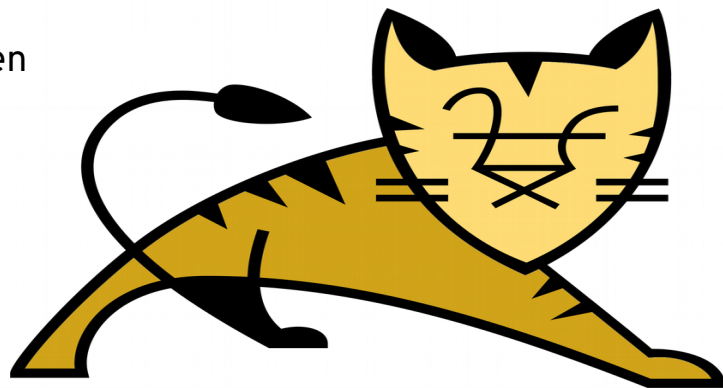
JBoss® Enterprise Web Server combines market-leading open source technologies with enterprise capabilities to provide a single solution for large-scale websites and lightweight Java web application. It includes certified, production ready versions of Apache Web Server, Apache Tomcat und common connectors used inbetween.

CORE FEATURES & BENEFITS

- Enterprise version of Apache Tomcat & HTTPD
- Enterprise grade product life cycle (up to 8 years)
- Tested integrations
- Tested web frameworks (Spring, jQuery, etc.)
- Integrated systems management & monitoring
- Community Leadership

More Information

- Datasheet:
<http://www.redhat.com/en/resources/jboss-enterprise-web-server>



JBoss Data Grid

PRODUCT OVERVIEW

Red Hat® JBoss® Data Grid, an in-memory distributed database, provides fast access to data and elastic scalability for large data volumes, allowing developers to meet tough requirements related to data retention, response time, and uptime. JBoss Data Grid offers a complementary layer to the existing data tier and compatibility with applications written in any language, using any framework and platform via multiple APIs such as memcached, Hot Rod, and REST.

CORE FEATURES & BENEFITS

- HIGH AVAILABILITY TO ACCESS DATA
- ELASTIC SCALE TO MAINTAIN FAST RESPONSE TIMES
- INTEGRATED DEVELOPER ENVIRONMENT

More Information

- Datasheet:
<http://www.redhat.com/en/resources/jboss-data-grid-datasheet>



JBoss Fuse / JBoss A-MQ

PRODUCT OVERVIEW

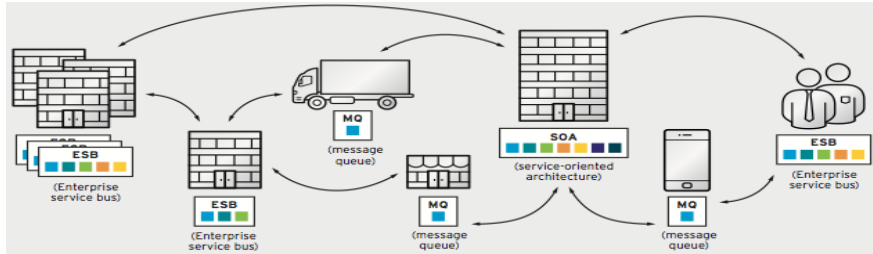
Red Hat® JBoss® Fuse is an open source enterprise service bus (ESB) that reduces the pain of connecting disparate applications, services, and devices for comprehensive and efficient solutions. JBoss Fuse includes the popular and versatile Apache Camel project, an implementation of the most commonly-used enterprise integration patterns. With integration patterns and more than 150 connectors ready to use, JBoss Fuse supports integration across the extended enterprise—including applications and services on-premise, on mobile devices, or in the cloud.

CORE FEATURES & BENEFITS

- Flexible integration & web services framework
- Enterprise messaging solution
- Rapid & cost effective integration
- Simplifies data transformation & orchestration

More Information

- Datasheet:
<http://www.redhat.com/en/resources/red-hat-jboss-fuse-datasheet>



Apache
Camel

JBoss Data Virtualization

PRODUCT OVERVIEW

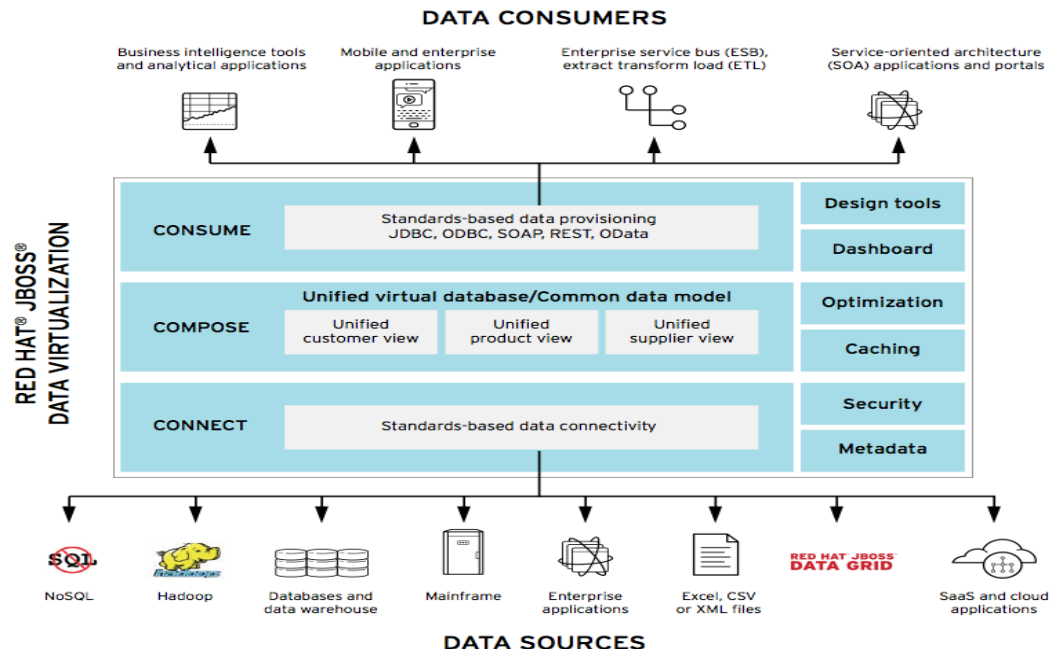
Red Hat® JBoss® Data Virtualization is a lean data integration solution that provides easy, real-time, and unified data access across disparate sources to multiple applications and users. JBoss Data Virtualization makes data spread across physically distinct systems – such as multiple databases, XML files, and even Hadoop systems – appear as a set of tables in a local database.

CORE FEATURES & BENEFITS

- Provides self-service Business Intelligence
- Improves information control & security

More Information

- Datasheet: <http://www.redhat.com/en/resources/red-hat-jboss-data-virtualization-datasheet>



JBoss Business Rules Management System

PRODUCT OVERVIEW

Red Hat® JBoss® BRMS is a powerful open source business rules management system (BRMS) that also includes business resource planning and complex event processing (CEP) technology. It helps organizations capture business logic and automate business decisions across heterogeneous environments including physical, virtual, mobile, and cloud.

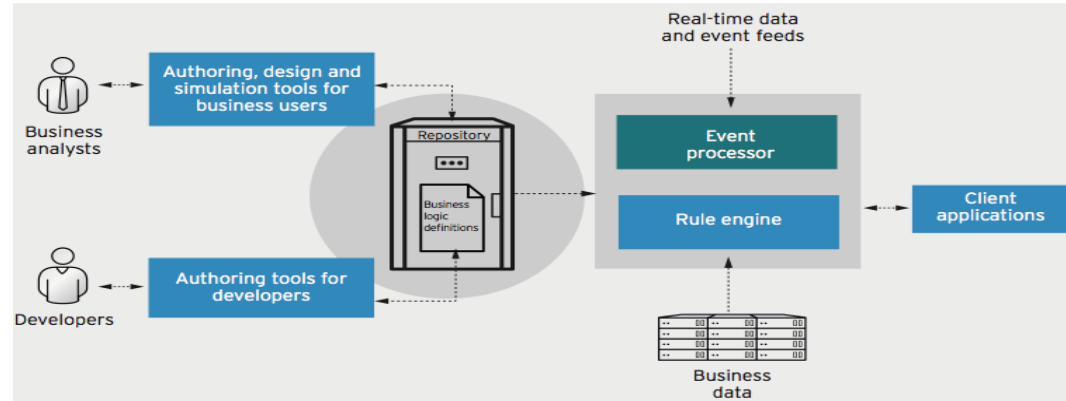
With JBoss BRMS, organizations can incorporate sophisticated decision logic into line-of-business applications, confident that they can keep abreast of the rapid pace of change in market conditions and regulations. JBoss BRMS enables decision logic to be separated from program code and defined in simple, declarative, business-friendly terms, making it far easier and more efficient to implement, manage, audit, and change.

CORE FEATURES & BENEFITS

- Express rules in terms that the business can readily understand
- Gain agility & speed in changing business functions

More Information

- Datasheet:
<http://www.redhat.com/en/resource/s/red-hat-jboss-brms-6-datasheet>



JBoss BPM Suite

PRODUCT OVERVIEW

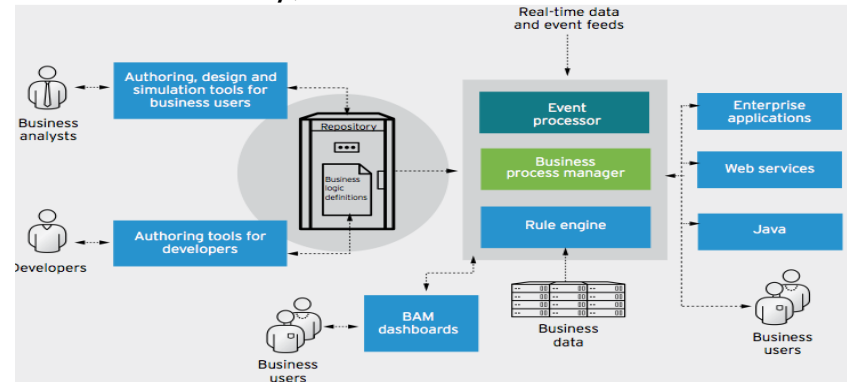
Red Hat® JBoss® BPM Suite combines business process management (BPM), business rules management (BRM), business resource planning, and complex event processing (CEP) technologies into a single, integrated, open source platform. It includes all the capabilities of Red Hat JBoss BRMS, along with comprehensive support for business process modeling, execution and monitoring. It enables users to capture business policies and procedures, automate business operations, and measure the results of business activities across heterogeneous environments including physical, virtual, mobile, and cloud. JBoss BPM Suite includes easy-to-use graphical tools that foster collaboration between IT and business users and provide better visibility into the rules and procedures that govern business applications. The result is improved business agility, increased operational efficiency, and faster time to market.

CORE FEATURES & BENEFITS

- Leading edge rules engine & business process engine (BPMN2)
- Graphical process modeling
- Complete end-to-end suite
- Datasheet

More Information

<https://www.redhat.com/de/resources/red-hat-jboss-bpm-suite-6>



Red Hat Mobile Application Platform

PRODUCT OVERVIEW

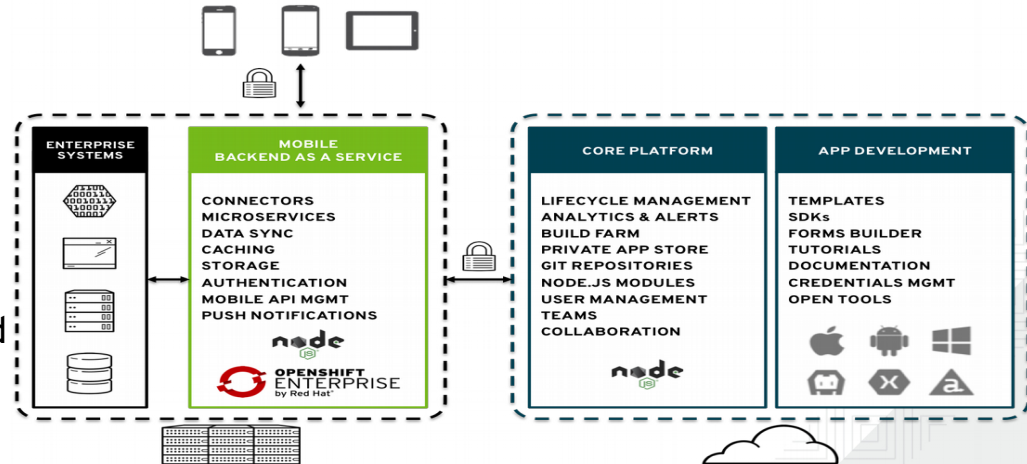
Red Hat Mobile Application Platform supports an agile approach to developing, integrating, and deploying enterprise mobile applications whether the apps are native, hybrid, or on the web. Collaborative development across multiple teams and projects with a wide variety of leading toolkits and frameworks is supported. The platform also offers central control of security and policy management, the ease of Mobile Backend-as-a-Service (MBaaS) integration with enterprise systems, and a choice of cloud deployment options.

CORE FEATURES & BENEFITS

- Securely integrate mobile apps with back-end systems
- Centrally managed security, from start to finish
- Flexible deployment with public, private, or hybrid clouds
- Bring your own tools - native and hybrid applications for iOS, Android, and Windows Phone.

More Information

- <http://www.redhat.com/en/technologies/mobile>



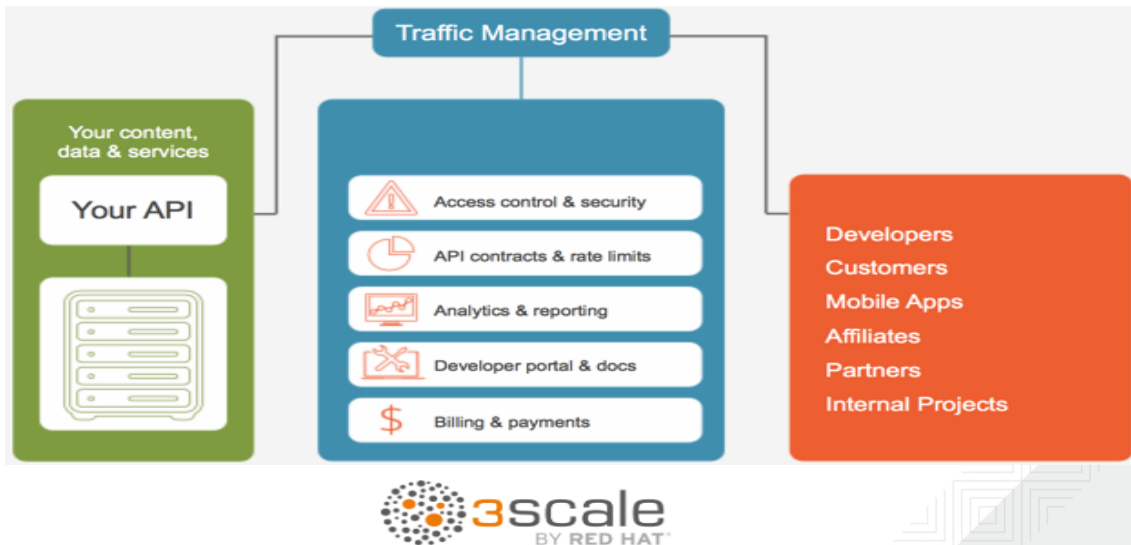
3Scale API Management by Red Hat

PRODUCT OVERVIEW

3scale is the API infrastructure to build on now, and for the future. We make it easy to manage your APIs for internal or external users. Share, secure, distribute, control, and monetize your APIs with the platform built with performance, customer control, time-to-value, and growth in mind.

CORE FEATURES & BENEFITS

- Unmatched flexibility
- High availability and performance
- Powerful adaptive infrastructure



More Information: <https://www.3scale.net/>

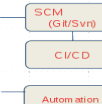
Red Hat OpenShift Container Platform

PRODUCT OVERVIEW

OpenShift is a complete container application platform that provides all aspects of the application development process in one consistent solution that can span across multiple infrastructure footprints. OpenShift integrates all of the architecture, processes, platforms, and services needed to empower development and operations teams. Now they can create their ideal cloud computing service tailored for applications, integration, or mobile.

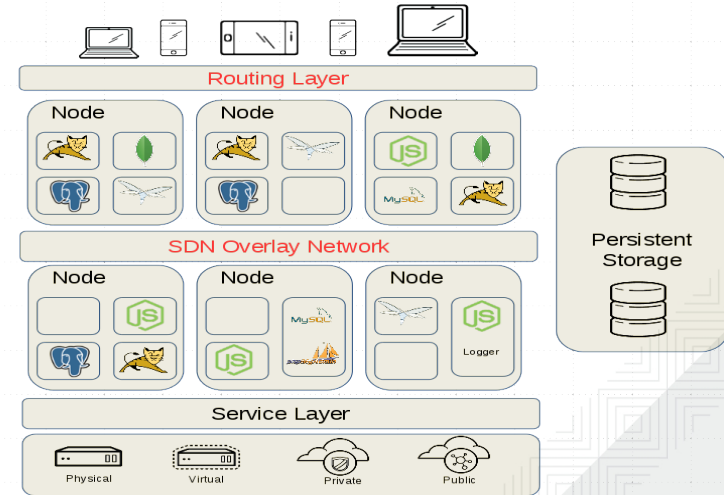
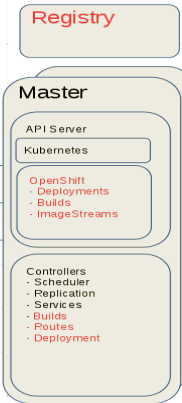
CORE FEATURES & BENEFITS

- Accelerate business innovation
- Enable DevOps and microservices applications
- Enterprise-grade security and scalability
- Hybrid cloud ready



C/CD

Automation



More Information

<https://www.redhat.com/en/technologies/cloud-computing/openshift>

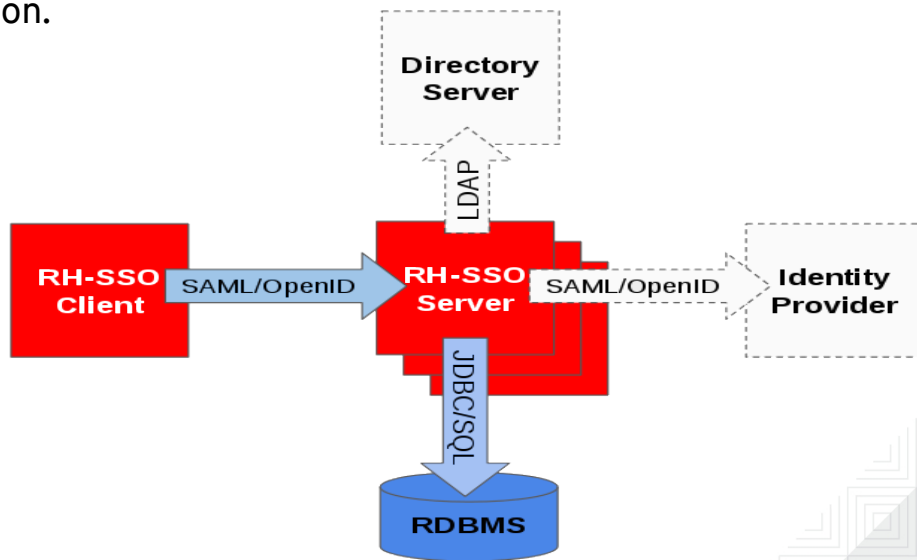
Red Hat Single Sign-On

PRODUCT OVERVIEW

Red Hat® Single Sign-On is an open standards based Single sign-on server. It supports SAML 2.0 and Open ID Connect. It is included as part your JBoss EAP, JBoss BRMS/BPMS, JBoss Data Virtualization, JBoss Data Grid or JBoss Fuse / A-MQ subscription.

CORE FEATURES & BENEFITS

- Integration with Red Hat Enterprise Linux
- Integration with OpenStack ()
- Intergration with other social logins



More Information:

Documentation: <https://access.redhat.com/documentation/en/red-hat-single-sign-on/>