



JBoss Enterprise Application Platform

JBoss Technology

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Sumar

- Red Hat, Jboss
- Jboss.org - Jboss Enterprise
- Jboss Subscription
- Jboss Enterprise Middleware (platforme / tools / JON)
 - Technology Outline
- Application Platform
 - Components
- Enterprise Portal Platform
- Data Services Platform
- Application Platform
 - Jboss Application Server
 - Hibernate
 - Jboss SEAM
- JBoss Portal
- MetaMatrix
- Red Hat Studio

- Red Hat, Jboss
- Jboss.org vs Jboss Enterprise

•Jboss.org

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- Peste 30 proiecte, fiecare cu ciclu de dezvoltare si dependinte diferite
- Suport din partea comunitatii
- Wiki
- Issue trackers
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•JBoss Enterprise

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- Distributii cu proiecte integrate, certificate
- Proces de asigurare a calitatii
- Documentatie
- Siguranta
- Configuratii gata pentru exploatare in productie
- Release-uri anuale, update-uri lunare si service packs trimestriale

Jboss.org – Jboss Enterprise

	Jboss.org	JBoss Enterprise
Target / Audienta	Software disponibil gratuit pentru utilizatori cu nevoi limitate sau cu pregatirea necesara	Software bazat pe subscriptie, pentru clientii care doresc solutii stabile, certificate si de cea mai inalta calitate.
Filosofie	Platforma construita din proiecte Jboss, poate include facilitati expreimentale	Platforma pre integrata sub forma unei distributii cu cele mai actuale si stabile versiuni
Suport	Indisponibil	24x7, Servicii complete de suport
Update	La latitudinea leaderului proiectului, in general de 2 ori pe an	Release-uri anuale, update-uri lunare si service pack trimestrial
Fix-uri rapide	Indisponibil	Disponibil la cerere
Securitate	Best Effort'	Patch-uri via Redhat Security Response

Diferente Jboss.org - JbossEnterprise

	JBoss.org	Jboss Enterprise
Open Source	x	x
Beneficiaza din partea testelor comunitatii	x	x
Release-uri	Experimental	Matur
Program pentru actualizari lunare		x
Program service-packs trimestriale		x
Program pentru fixuri rapide		x
Servicii de alertare privind update-uri disponibile		x
Bug Escalation Process		x
24x7 Suport		x
Certificari si cursuri		x
Defineste reguli pentru suport (SLA & End-Of-Life Policy)		x
Configurat de la inceput production-ready		x
Include JBoss Operations Network (JON)		x
Disponibilitate JON Monitoring		x
Testare extensiva, coordonata, interna si externa		x

Suport JBoss

	Developer Professional	Developer Enterprise	Production Standard	Production Enterprise
Ore	L-V, 9:17	24x7	L-v 9:17	24x7
SLA	2 Zile	4 Ore	4 ore	1 ora
Acces	Web + Tel	Web + Tel	Web + Tel	Web + Tel

- Inginerii de la Jboss support sunt **experti Java EE**
- Echipa de dezvoltare Jboss ofera in mod regulat support
- Subscriptiile developer acopera toate ofertele Middleware Jboss, RHEL si alte produse Red Hat

Jboss Enterprise Middleware

Enterprise Platforms

SOA /
Integration
Platform

Aplication
Platform for
Portals

Data
Services
Platform

Enterprise Frameworks

Jboss SEAM

Jboss Hibernate

Jboss jBPM

Jboss Rules

Tools

Red Hat
Developer
Studio

Application Platform

Other

Sistem de operare Red Hat
sau alt sistem de operare

Jboss
Operations
Network

Tehnologii JBoss

■ Application Platform

- JBoss Application server
 - ✓ JBoss Cache
 - ✓ JGroups
 - ✓ JBoss Transactions
 - ✓ JBoss web
 - ✓ Apache Tomcat
 - ✓ JBoss WS
 - ✓ JBoss AOP
 - ✓ JBoss Remoting
- Hibernate
- JBoss SEAM

■ Enterprise Platform Portal

- JBoss Portal

■ Data Services Platform

- ✓ Metamatrix

■ SOA / Integration Platform

- JBoss ESB
- JBoss jBPM
- Jboss Rules

■ Administrare

- JBoss Operations Network

■ Instrumente de dezvoltare

- Red Hat Developer Studio

Aplicatiune Platform

- **Compatibilitate intre componente**
 - Teste de integrare
 - RPM packaging (under development)
- **Suport pentru diferite sisteme de operare**
 - *RHEL* (Red Hat Enterprise Linux)
 - Linux (ex. SuSE, etc.)
 - UNIX (Solaris, HP/UX, AIX, etc.)
 - Windows
- **Suport pentru diferite masini virtuale java**
 - Sun, BEA JRockit, IBM, HP
 - 32 si 64-bit
- **Suport pentru diferite baze de date**
 - Orice baza de date care suporta JDBC

Application Platform - Componente

- **JBoss Application Server 4.2**
 - servicii J2EE 1.4 inclusiv EJB, web services si JMS
 - JBoss cache (clusterizabil)
 - Tomcat – pentru Srvlets, JSP si JSF
- **Hibernate 3.2.4 SP1**
 - Scalabilitate inalta cu 2 niveluri de cache
 - ORM-ul cel mai folosit
 - Limbaj de interogare robust
- **JBoss Seam 1.2**
 - dezvoltare rapida a aplicatiilor JSF
 - ofera suport Spring
 - include JBOSS Rules si jBPM; editor vizual pentru fluxul de pagini

JBoss AS 4.2

- **J2EE 1.4 Certified : Web Services, Messaging, etc.**
 - **100% Java**
 - **ruleaza pe orice platforma hardware si SO cu JVM compatibil**
- **JMX-Microkernel**
 - **customizable middleware footprint**
 - **enhanced performance via co-located services**
- **Administrare, Monitorizare si Management**
 - **consola web ofera grafice si alerte pe email in timp real**
 - **JBoss Operations Network pentru administrare enterprise-wide**
- **Managementul Transactiilor Distribuite**
 - **JBoss Transactions**
- **Enterprise-Ready Clustering**
 - **deployment usor in cluster**
 - **cluster dinamic**
 - **toleranta la erori**
 - **silent failover**
 - **fine-grained state replication (HttpSession, SFSB, JNDI)**
 - **buddy replication & data gravitation**

Apache Tomcat 6.0

- **S-a dovedit:**
 - Cel mai popular JSP/Servlet engine de pe planeta!
 - Indeplineste Servlet/JSP Spec 2.5/2.1
 - Performant in mediile cu trafic intens
- **Flexibil**
 - Webservere statice cum ar fi Apache sau IIS se ataseaza
 - ✓ via mod_jk 1.2 (AJP 1.3)
 - Procesare performanta HTTP nativa
 - ✓ via JBoss Native + Apache Portable Runtime (APR)
- **Avantajele Embedded Tomcat vs Standalone**
 - Clustering pentru o inalta disponibilitate si scalabilitate
 - Cluster-Wide Hot Deployment
 - Java Transaction API (JSR 907) via JBoss Transactions
 - J2EE Connector Architecture 1.5 (JSR 112)
 - Pool de conexiuni incorporat
 - Java Message Service 1.1 (JSR 914)
 - Java Persistence API 1.0 (JSR 220)
 - EJB 3.0 (JSR 220)
 - Transfer prin referinta pentru JSP -> EJB
 - Usor de upgradat la Portal si ESB

JBoss Cache 1.4

Cache distribuit, tranzactional pentru POJO

- **Reduce incarcarea bazei de date si traficul pe retea**
 - **Obiectele Java folosite frecvent sunt cache-ate in memorie**
 - **Mai putine interogari ale bazei de date = Aplicatii mai rapide**

- **Simplificare**
 - **Fara implementare de interfete!**
 - **Se scriu <10 linii de cod**

- **Replicarea starii**
 - **Replicare locala sincrona/asincrona (Thread/Queue)**
 - **Modificari tranzactionale in cluster**
 - **TreeCacheAOP replica doar schimabarile atributelor si nu intregul obiect!**

- **Persistenta**
 - **Preincarcare din fisier, SleepyCat or JDBC**
 - **Definita prin 'eviction policies' (politici de eliminare) – timp /marime/ personalizate**

- **Fiabilitate**
 - **Construit pe tehnologie JGroups**

JBoss Messaging 1.2

- **Certificat JMS 1.1**
 - **Topics si queues suportate**
 - **Publish / Subscribe**
 - **Point to point**
 - **Livrare garantata a mesajelor**
 - **Persistent (RDBMS)**
 - **Tranzactional**

- **Performanta**
 - **Messaging core conceput pentru o performanta maxima**

- **Tranzactii distribuite via JBoss Transactions**

- **Suport complet pentru clustering**
 - **Topics/Queues replicate**
 - **Topics/Queues segmentate**
 - **Load balancer inteligent**

JBoss Transactions 4.2

- **Tehnologie de renume**
 - Utilizata de aproape un deceniu

- **Bazata pe standarde – 100% Java pur**
 - JTA 1.0.1 (implementari locale & XA)
 - JTS 1.0 (OTS 1.4) (prima implementare pur java)
 - WS-Transaction (Interoperabilitate dovedita cu MSFT & IBM)
 - WS-Coordination
 - WS-Atomic Transaction
 - WS-Business Activity
 - Internationalizare (I18N) & Localizare (L10N)

- **Caracteristici**
 - Ruleaza intr-un container J2EE/JEE dar si exterior
 - Recuperare deplina (distribuita) in caz de
 - Portabila pe ORBs (e.g. Orbix 2k, JacORB, JDK ORB etc)
 - Inalt configurabila

JBoss JGroups 2.4

comunicatii multicast

- **Fiabilitate pentru mesajele de grup**
 - De-Fragmentare
 - Re-transmisie
 - Ordonarea mesajelor
- **Nivel de transport configurabil (lan/wan)**
 - UDP, TCP, TCP_NIO, TUNNEL, JMS, LOOPBACK
 - Configurat implicit pe IP-Multicast peste UDP
 - Suport IPv4 si IPv6
 - Suporta sisteme de operare pe 64 biti
 - Statistici JMX
- **Compunere dinamica a grupurilor**
 - Adaugare & Stergere
- **Securitate**
 - Incriptare disponibila via SSL
 - Autentificarea membrilor (Token, Certificate)
 - LDAP (in viitorul apropiat)
- **Baza pentru JBoss Cache/Messaging/Clustering**

JBoss AOP 1.3

- Isolate “plumbing code” from business logic
 - @remote
 - @asynchronous
 - @transactional
 - @security
 - @logging
 - WRITE YOUR OWN!

- Injectarea in pojo a comportamentelor via
 - adnotari JDK 1.5
 - adnotari XDoclet
 - pointcut expressions

- Simplifica dezvoltarea & mentenanta

- NU necesita extensii ale limbajului Java!

JBoss Remoting 2.0

- **Simplu**
 - **Extremely lightweight**
 - **No need for generated client “stubs” (de-typed invocation)**
 - **URL-based invocations**
 - **transport://host:port/parameter1=value1¶mN=valueN**

- **Flexibil**
 - **Pluggable transport**
 - **RMI, HTTP, IIOP, raw socket, invocari locale optimize (refernta), etc.**
 - **Synchronous/Asynchronous invocation**
 - **Push/Pull Callbacks**
 - **Data marshalling customizabil**
 - **Paseaza obiecte proxies peste retea**

- **Fiabil**
 - **Clustered Invocations**
 - **Serializare de inalta performanta**
 - **Arhitectura folosita pentru invocari la distanta in JEMS**

JBoss WS 1.0.3

- **WS4EE-1.1 - Enterprise Web Services for Java**
 - **WS-I Basic Profile 1.0 (independent de platforme/limbaje)**
 - **SOAP-1.1 - Simple Object Access Protocol**
 - **WSDL-1.1 - Web Services Description Language**
 - **XML 1.0 - eXtensible Markup Language**
 - **UDDI 2.0 – Universal Description, Discovery, and Integration**
 - **JAXP-1.2 – Java API for XML Parsing (DOM & SAX)**
 - **JAXR-1.0 - Java API for XML Registries (UDDI)**
 - **SAAJ-1.2 - SOAP Attachments API for Java (SwA)**
 - **JAXRPC-1.1 - Java API for XML-based RPC**
 - **Client access via Generated Stub, Dynamic Proxy, & DII**

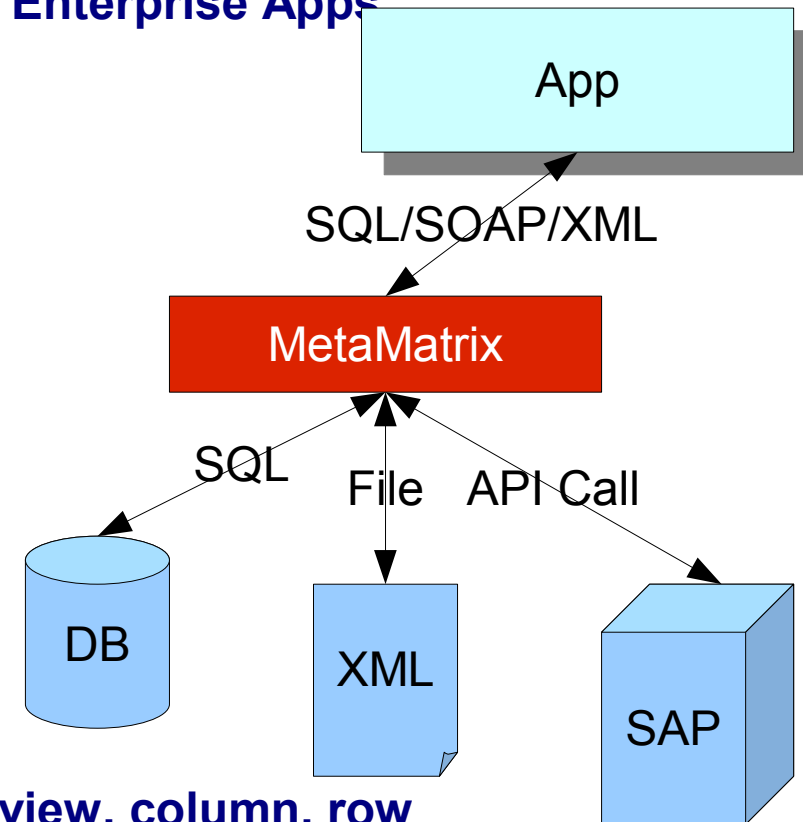
- **Caracteristici**
 - **Expune POJOs sau SLSBs ca WebServices**
 - **Securitatea asigurata prin web container (HTTPS, JAAS, HTTP-basic)**
 - **Suport document/literal pentru compatibilitatea cu Microsoft .Net**
 - **Servicii web Annotation-driven webservices via JSR-181**
 - **JBossWS Tools, WS-Security 1.0, WS-I Basic Profile 1.1**

JBoss Portal 2.6

- **Caracteristici**
 - Agregarea si personalizarea content-ului
 - Portabilitatea Java Portlet via JSR-168
 - Java Content Repository (JSR-170) cu Approval Cycles
 - WSRP Complex Support
 - Single Sign-On across portlets (suport JAAS/JACC)
 - Clustering pentru o inalta disponibilitate
 - Suporta cele mai populare baze de date via Hibernate
 - Oracle, MySQL, MS SQL-Server, DB2, etc.
- **Runtime Administration GUI**
 - Creeaza/Sterge pagini de portal
 - Amplaseaza/Sterge un portlet pe o pagina de portal
 - Configureaza securitatea unui portlet
 - Gestioneaza teme
- **Portleti**
 - Inclusi: Content Mgt, User Mgt, RSS Readers etc.
 - Alti portleti disponibili prin comunitate la www.portletswap.com
 - Parteneri la Red Hat Exchange (<http://rhx.redhat.com>)
- **In viitor**
 - Randare paralela cu suport AJAX

MetaMatrix Enterprise

- **Integrarea in timp real a datelor**
 - Baze de date relationale, fisiere, servicii web, Enterprise Apps
 - Punct de acces unic
 - Leave Data in Place, or Consolidate
 - Meta Data Management, Data Lineage
- **Transformarea informatiei**
 - Scheme unificate
 - Imbogatirea datelor (Enrich Data)
- **Performanta inalta**
 - Advanced Query Optimizer
 - Caching
 - Distribuirea serviciilor catre multiple servere
- **Securitate**
 - Autorizare granularizata la nivel de: schema, view, column, row
 - Audited data access
 - Certified for US Intellegence and Financial Services applications
- **Eclipse based, graphical design tools**



JBoss ESB 4.0

- **Message delivery**
 - JMS (JBossMQ, JBoss Messaging, ActiveMQ, MQSeries)
 - (S)FTP, HTTP, email, baza de date, shared file system

- **Transformarea continutului**
 - XSLT, Java, Groovy, StringTemplate

- **Content-based routing**
 - JBoss Rules, XPath DSL

- **Orchestration**
 - Light weight via XML configuration with hot deployment
 - BPM-based orchestration allows service and human interaction

- **Registry**
 - JAX-R based
 - UDDI support out-of-the-box (Scout and jUDDI)

- **Gateways**

- **Exemple si documentatie cuprinzatoare**

JBoss Seam 1.2

- **EJB3 + JSF + AJAX**
 - Integrare usoara a acestor modele de componente
- **Managementul starilor declarativ**
 - Across multiple scopes
- **Subversion of Control**
 - Dinamic, Contextual si Bi-Directional
- **Integrare cu jBPM**
 - Task management
 - Controlul executiei proceselor
- **Securitate implementata declarativ**
 - Rules Based
 - IDM compatibil via JAAS
- **Simplificarea procesului de dezvoltare a aplicatiilor web complexe**
 - “Configuration by exception”
 - Adnotari
 - Page-flow definit grafic
 - Ofera interfata in linie de comanda independenta de IDE (seam-gen)
 - Testabil unitar (JUnit / Test NG)

Hibernate 3.2

- **Persistenta transparenta**
 - Orice POJO poate fi o clasa persistenta
 - Nu trebuie implementata nici o interfata
 - Nu trebuie extinsa nici o super-clasa persistenta

- **Caracteristici**
 - Auto-generarea unei scheme din obiecte / vice versa
 - Suprascrierea cu SQL-uri de mana sau proceduri stocate
 - Suport pentru “detached objects”
 - Elimina DTOs (Data Transfer Objects)
 - JMX Management Interface

- **Independenta fata de baza de date folosita**
 - Genereaza dinamic SQL vendor-specific
 - Suporta majoritatea bazelor de date (Oracle, MS-SQL, DB2, Sybase, etc.)

- **Sta la baza specificatiilor pentru EJB3.0 entity beans**
 - (Specificatiile EJB3 au fost finalizate la 11 mai 2006)
 - Inovare & Standardizare

JBoss jBPM 3.2

- **Definirea declarativa a proceselor de business**
 - Evita erorile de comunicare dintre business analyst si dezvoltator
 - Se pot adauga/sterge procese fara reproiectarea aplicatiei
 - Visual Process Designer in JBoss Eclipse IDE 1.5

- **Graph Oriented Programming**
 - Fara generare de cod!
 - Ataseaza cod de business nodurilor/tranzitiilor din diagrama procesului
 - Independenta fata de limbajul de definitie
 - BPEL (Beta) & JPDL sunt suportate astazi

- **State Management (Managementul starii)**
 - Reprezentarea persistenta a starii curente a procesului
 - Variabile de context asociate fiecarei instante a procesului
 - Independenta fata de baza de date via Hibernate
 - Acces usor la schema bazei de date relationale

- **Integrare**
 - Poate rula atat in cadrul cat si in afara unui Application Server J2EE
 - Web Services, JCA, JMS, Database, IIOP

JBoss Rules 3.0.6

- **Reguli de Business implementate declarativ**
 - Evitarea hardcodarii regulilor de business pe nivelul de business al aplicatiei
 - Reguliile pot fi schimbate fara modificarea codului Java sau recompilare
 - Sistem expert care permite rezolvarea problemelor complexe
- **DRL (Drools Rule Language), DSL, CSV, XML (Drools 3.0) si Programatic Rules Definition**
 - Obiecte (facts) mixate cu condititii (rules) - similar cu HQL
 - Reference POJO model
 - Decision Tables generated from Excel/Open Office
 - DSL (Domain Specific Language) – extensii specifice, limbaj natural
- **Working Memory Based Repository**
 - repository de cunostinte in-memory
 - Forward chaining: Based on Rete Algorithm
- **Arhitectura si integrare**
 - 100% Java, poate rula in afara unui Application Server J2EE
 - Integrabil cu J2EE, JSP, Web Services, jBPM, Seam
 - Bazat pe standarde: compatibil cu JSR-94
- **In viitor**
 - Backward chaining, suport extins pentru limbaje naturale

JBoss Rules IDE

- **Suport Eclipse pentru formatul DRL “1st Class Citizen”**
 - **colorarea sintaxei**
 - **validare**
 - **intellisense**
 - **outline view**

- **Debug views**
 - **WorkingMemory**
 - **Globals**
 - **Agenda**
 - **Execution Audit**

- **Rete network view**

- **New project and rule wizard**

- **Testabil unitar via JUnit/TestNG direct in IDE**

Red Hat Developer Studio

- **Istoric**
 - **Achizitia Exadel Enterprise Developer Studio 4.0.3**
 - **Se adauga pluginurile-cheie JBossIDE**
 - **Prezentat la EclipseCon (Martie 2007)**

- **Caracteristici**
 - **Suport JSF – Incluzand Facelets**
 - **Instrumente Hibernate**
 - **Struts si Spring**
 - **JBoss si alte servere**
 - **Database Explorer**
 - **Seam, bazat pe seam-gen (nou)**
 - **jBPM process designer**
 - **JBoss Rules designer/debugger**

- **In viitor**
 - **Eclipse update site for Open Source Plugins**
 - **Portlet Wizard**

Intrebari

- http://www.esolutions.ro/redhat/jboss_technology/