

JBoss Strategic Roadmap

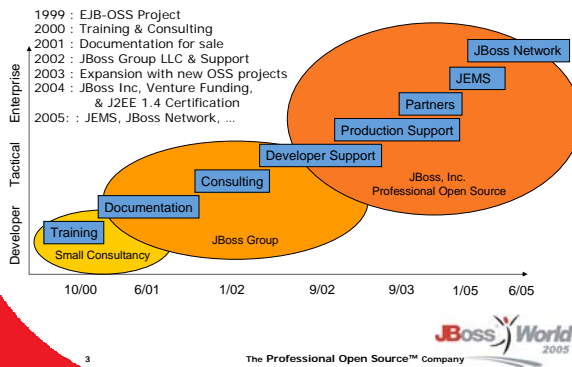
Scott Stark – Chief Technology Officer
scott.stark@jboss.com

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Agenda

- JBoss Enterprise Middleware System
 - ✓ JBoss Products and JBoss Projects
- JBoss Roadmap
 - ✓ Enterprise POJOs
- Q&A

JBoss Evolution & Momentum



Technology Leadership in 2004

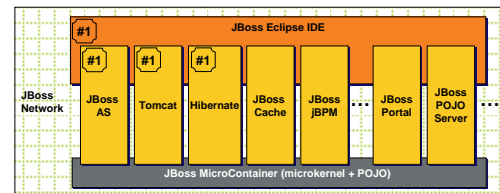
- JBoss Application Server
 - ✓ 4.0.x Released, J2EE 1.4 Certified
 - ✓ Aspect Oriented Middleware
 - ✓ EJB3 and Enterprise POJOs ease development
- Tomcat
 - ✓ Enhancements to stand alone
 - ✓ Integration brings greater manageability, cache, performance
 - ✓ Support for Apache Web Server Integration
- JBoss JBPM
 - ✓ JBoss enters BPM market
 - ✓ Foundation for business process stack
- Hibernate
 - ✓ Defacto leader in OR Mapping
 - ✓ Easing Enterprise Java Development
- JBoss Cache
 - ✓ Distributed, fine-grained cache
- JBoss IDE joins forces with Eclipse
- Introduction of JBoss Enterprise Middleware System (JEMS)

2005 Roadmap Objectives

- Build out JEMS product offerings with goal of being de-facto comprehensive middleware standard
- Bring the POJO development model to JBAS
- Propagate the POJO development model to everything
 - ✓ SEAM
 - ✓ Integration of the web, business model, and business process domains

JEMS

- Market Leading, Best of Breed Products
 - ✓ Comprehensive middleware stack over next 1-2 years
 - ✓ Develop, Deploy, Integrate, Manage
- Loosely-coupled, plug and play architecture
 - ✓ Use what you need, don't use what you don't need



JBoss Projects

- JBoss AS
 - ✓ J2EE 1.4
 - ✓ J2EE 1.5
 - ✓ EJB 3.0
 - ✓ JBoss AOP
 - ✓ POJO Server
 - JBoss MicroContainer
 - Hibernate
 - JBoss Cache
 - JBoss Eclipse IDE
 - JBoss jBPM
 - JBoss Portal
 - JGroups
 - JBoss Web (Tomcat)
 - JBoss Management Console
 - Javassist
 - JBoss Mail
 - JBoss Messaging
- JBoss AS Subprojects
 - ✓ JBoss Clustering
 - ✓ JBoss IIOP
 - ✓ JBoss JCA
 - ✓ JBoss JMX
 - ✓ JBoss JTA
 - ✓ JBoss MQ
 - ✓ JBoss Remoting
 - ✓ JBoss Security
 - ✓ JBossWS



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JEMS 2005 – The Road Ahead

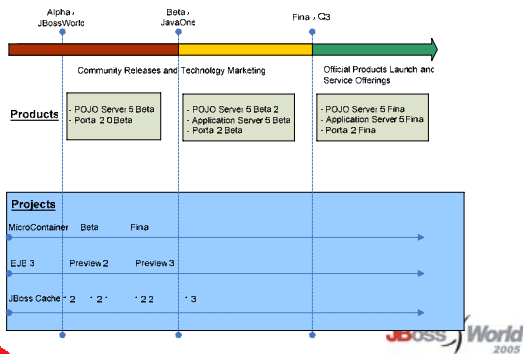
- JBoss AS 5
 - ✓ JBoss POJO Server – Enterprise POJOs
 - EJB3, Hibernate 3, Aspect Library, etc.
- Hibernate 3
- JBoss Portal 2
- JBoss jBPM 3
- JBoss Cache 1.3
- JBoss Messaging 1.0
- JBoss Remoting 1.2
- JBoss WebServices 2.0
- JBoss Eclipse IDE 1.5
- JBoss Network / Management Console



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8

Example: JEMS 2005 Integration Milestones

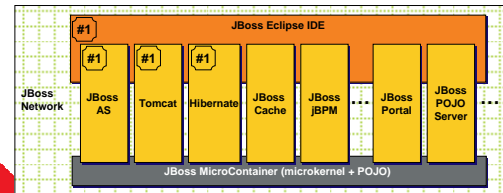


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JEMS Functionality

- | Available Today | Coming in 2005 |
|--------------------------------------|--|
| • JBoss AS: J2EE 1.4 App Server | • JBoss Portal: Portal framework |
| • Tomcat: JSP/Servlet Container | • JBoss POJO Server: JBoss AS for Enterprise POJOs |
| • Hibernate: Persistence, OR Mapping | • JBoss Network: Knowledge, Patch Distribution, Application Management |
| • JBoss Cache: Distributed caching | |
| • JBoss jBPM: Workflow engine | |
| • JBoss Eclipse IDE: Development | |



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10

2005 Roadmap



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11

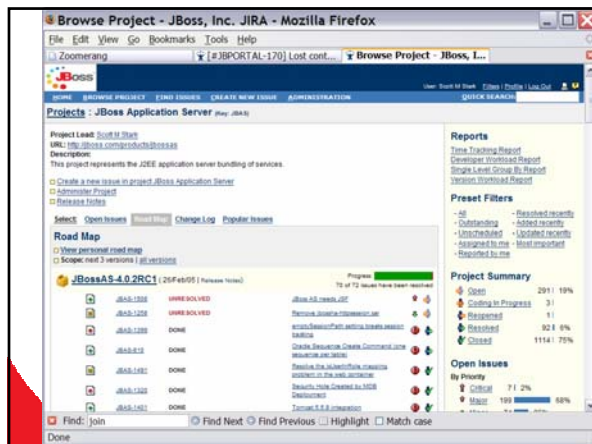
Unified Roadmap Portal - JIRA

- <http://jira.jboss.com/>
 - ✓ Top level entry point for JBoss projects
 - ✓ Project issues and roadmaps
- <http://www.jboss.org/wiki/Wiki.jsp?page=ProjectManagementAndIssueTracking>
 - ✓ Wiki page describing the use of JIRA



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12



Productize the MicroKernel

- A standalone lightweight product
 - ✓ Run JBoss services without the Application Server
 - ✓ Use JBoss services in somebody else's Application Server
- It fits JBoss' POJO strategy
 - ✓ Code in plain java
 - no need to import framework classes
 - ✓ JBoss manages your POJO, adding middleware features
 - ✓ JMX is not disappearing, its just an aspect
 - POJOs can be JMX manageable



14

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POJO MicroContainer 1.0

- Basis for JBoss AS 5 and JBoss POJO Server
- POJO MicroContainer
 - ✓ Enhanced service model
 - Formal state machine
 - Life cycle for distributed services
 - ✓ Enhanced dependencies
 - Constructor level
 - Reverse dependencies
 - Distributed dependencies
 - ✓ Service start-up mode
 - Enabled: start immediately
 - On demand: start only when needed; port access, JNDI lookup
 - Disabled: registered; no resource consumption



15

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JBoss 5.x Infrastructure

- Built on POJO MicroContainer
- Unified Interceptors and Invokers
 - ✓ Shared across AOP/JMX/EJB/JMS/WS, etc.
 - ✓ Declared via annotations or XML descriptors
- Rich Palette of System Aspects
 - ✓ Transactional: Transparent JTA
 - ✓ Security: Transparent JAAS
 - ✓ Remoting: Pluggable transports
 - ✓ Cache: Distributed, transactional shared memory
 - ✓ Pool: Connections, Threads, Sockets, etc.
 - ✓ Instrumentation
 - Profiling
 - ✓ Synchronous & Asynchronous



16

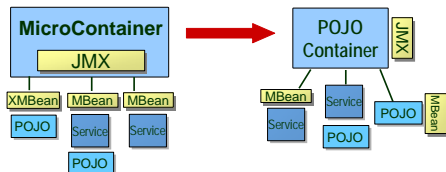
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4.0 versus 5.0

- Unification of the AOP framework with the existing containers/interceptors

Today: a JMX based Microkernel

Future: a POJO based Microkernel



17

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EJB 3.0

- J2EE a la carte
 - ✓ Code annotations
 - ✓ XML is optional
 - ✓ Transactions
 - ✓ Security
 - ✓ Asynchronicity
 - ✓ Web Services
 - ✓ Pooling
 - ✓ Cache
- POJO Persistence
- Enhanced EJBQL
- Java Server Faces friendly



18

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EJB 3: Inject, TX, Security

```
@Stateless public class AccountDAOBean implements Calculator
{
    @Inject private SessionContext ctx;

    @Tx(TxType.REQUIRED)
    @MethodPermission({"teller"})
    public void withdraw(double amount)
    {
        ...
    }
}
```

19

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EJB 3: Entity Annotations

```
@Entity
@Table(name="AUCTION_ITEM", schema="AUCTION")
public class Item {
    private Long id;
    private int version;
    private String description;
    private Set<Bid> bids = new HashSet();
    private User seller;

    @Column(name="DESC", nullable=false, length=500)
    public String getDescription() {
        return description;
    }
    public void setDescription(String desc) {
        this.description = desc;
    }
}
```

20

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JBoss Management

- User Friendly Console
 - ✓ Augments jmx-console, web-console
- Configuration persistence
- Configuration versioning
- Federated management
- JSR 88 – J2EE deployment integrated with JBossIDE
- JSR 160 - JMX Remoting

21

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Hibernate 3

- New ANTLR-based HQL parser
 - ✓ Superset of EJBQL3
- Support for Stored Procedures and hand-written SQL
- Support for JSR 175 annotations
- More Mapping Flexibility
 - ✓ single class to multiple table mappings
- Virtualization
 - ✓ parameterized filters to be applied at the session level
- EJB3-style bulk UPDATE and bulk DELETE queries.
- Statistics reporting and JMX-based monitoring

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JBoss Cache Roadmap

- Improved HA Stability and Performance
 - ✓ Optimistic locking and buddy replication
- Monitoring & stats integrated with JMX
- Integration with other cache and tree like services
 - ✓ JNDI, JMS, EJB, HttpSession

23

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JBoss Messaging

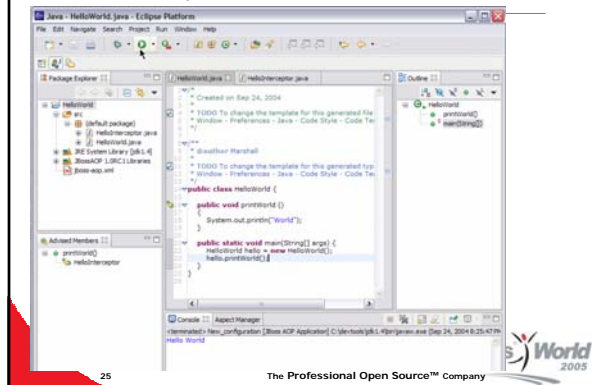
- Rewrite of JMS 1.1 designed with clustering in mind
 - ✓ High availability and load balancing
 - ✓ Collocated or remote cluster nodes
 - ✓ LAN: High performance multicast
 - ✓ WAN: Multiple protocols (RMI, SOAP, ...)
- High Performance
- Integration of transports
 - ✓ SOAP
 - ✓ Mail

24

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JBoss Eclipse IDE



25

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JBoss Eclipse IDE

- AOP
 - ✓ Right-click method aspects
 - ✓ Auto generate AOP declarations
 - ✓ Build time vs. run time aspects
 - ✓ Interceptors and advices
- EJB3
 - ✓ Smart annotations
 - ✓ Hot deployment
 - ✓ EJBQL scratchpad
 - Execute
 - Analyze performance
 - Query by example
 - ✓ Visual CMP mapping
- Service Archive (SAR) automation
- Monitoring and Management
- Profiling
 - ✓ In-depth real time monitoring
 - ✓ Detached production analysis

26

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JBoss Portal 2.x

- JSR 168 compliant container
- WSRP support
- Single sign-on, Users, Roles
- Personalization
- Customizable Look and Feel
- Professional looking theme palette
- Built-in portlets
 - ✓ Forums
 - ✓ Wiki
 - ✓ Blog
 - ✓ CMS

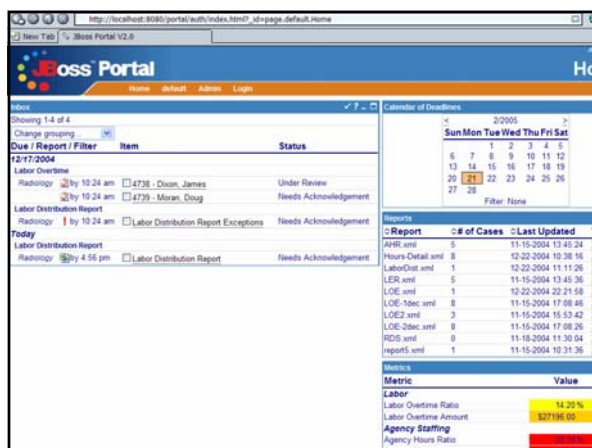
27

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28

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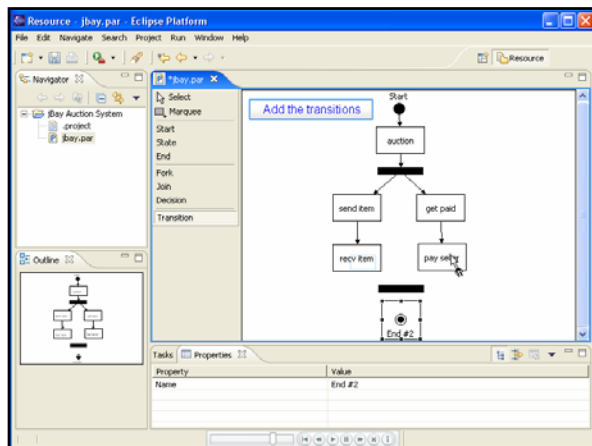
JBoss jBPM 3.x

- Layered modelling
 - ✓ separate directed graph
 - ✓ behaviour in the nodes
 - ✓ same engine for any process model
- Pluggable architecture
 - ✓ one responsibility == one module
 - ✓ makes each module simple
 - ✓ only use the modules you need
 - ✓ plug in your custom modules
- BP patterns library
- SOA via BPEL wrapper
- JBoss Eclipse IDE Process Designer plug-in

30

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WebServices 2.0

- JAXB 2.0 based marshalling layer
 - ✓ JBossXB implementation goes beyond JAXB
- Support SOAP-1.2, WSDL-2.0, Basic Profile 1.1
- Ease of deployment using Java Annotations (JSR175)
- Transport layer based on Remoting
- Session Management
- Simplified Handlers
- WS-Security, WS-Transaction support

32

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Summary

- Strategic Roadmap
 - ✓ JEMS - Build out Comprehensive, Loosely Coupled Middleware Stack
 - <http://www.jboss.com/products/overview>
- Product Roadmap
 - ✓ Focus on Enterprise POJOs
 - ✓ Unified Project issue and roadmap tracking
 - <http://jira.jboss.com>

33

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