

JBoss Strategic Roadmap

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Agenda

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

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JBoss Evolution & Momentum

1999 : EJB-OS Project
2000 : Training & Consulting
2001 : Documentation for sale
2002 : JBoss Group LLC & Support
2003 : Expansion with new OSS projects
2004 : JBoss Inc, Venture Funding, & J2EE 1.4 Certification
2005 : JEMS, JBoss Network, ...

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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)

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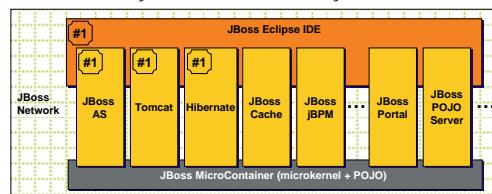
2005 Roadmap Objectives

- 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

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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



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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

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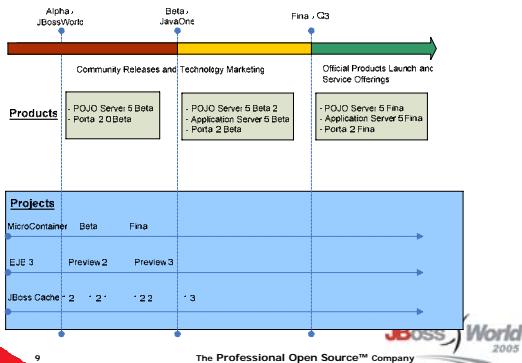
JEMS 2005 – The Road Ahead

- 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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Example: JEMS 2005 Integration Milestones



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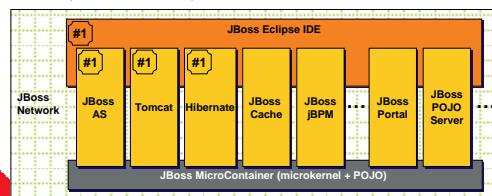
JEMS Functionality

Available Today

- JBoss AS: J2EE 1.4 App Server
- Tomcat: JSP/Servlet Container
- Hibernate: Persistence, OR Mapping
- JBoss Cache: Distributed caching
- JBoss jBPM: Workflow engine
- JBoss Eclipse IDE: Development

Coming in 2005

- JBoss Portal: Portal framework
- JBoss POJO Server: JBoss AS for Enterprise POJOs
- JBoss Network: Knowledge, Patch Distribution, Application Management



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2005 Roadmap

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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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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



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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

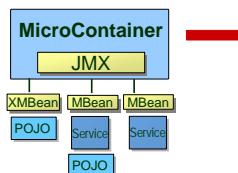
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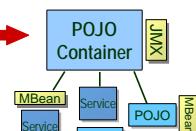
4.0 versus 5.0

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

Today: a JMX based Microkernel



Future: a POJO based Microkernel



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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



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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

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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) {  
        ...  
    }  
}
```

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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;  
    }  
}
```

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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

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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

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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

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JBoss Eclipse IDE

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JBoss Eclipse IDE

- AOP
 - ✓ Right-click method aspects
 - ✓ Auto generate AOP declarations
 - ✓ Build time vs. run time aspects
 - ✓ Interceptors and advises
- 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

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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

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JBoss Portal :: 2.0 Alpha release - Mozilla Firefox

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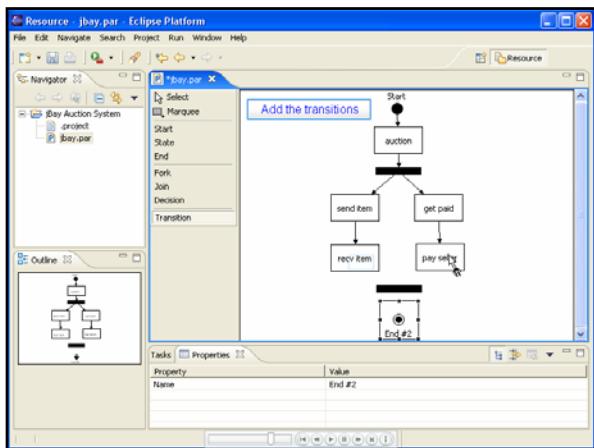
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JBoss jBPM 3.x

- 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

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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

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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>

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