

# JBoss Overview

AxS Training – 08/03/07

# What is JBoss?

- **Java Enterprise Application Server**
- **Java EE Container**
  - Implements the Java Enterprise specifications and is used to run enterprise applications
- **Webserver (Apache)**
- **Servlet Container (Tomcat)**
- **Provides support for scalability, distributed applications, load-balancing, fail-over and clustering.**

One stop shop for developing a completely robust, scalable and flexible end-to-end enterprise application.

# What Java technologies does it support?















- **Java Server Pages (JSP) and Servlets**  
Simple request / response mechanism via http
- **JAXP, SAAJ, and JAX-WS**  
XML-based data interchange integration
- **Java Message Service (JMS)**  
Supports publish / subscribe or point-to-point
- **Enterprise Java Beans (EJB)**  
Session beans, entity beans, and message beans
- **Java Transaction API (JTA)**  
Guarantees data consistency and integrity for DB access
- **Java Authentication and Authorization Service (JAAS)**  
Authenticates users and restricts access based on security policies

# What else does it support?

- **Java Naming and Directory Interface (JNDI)**  
Directory interface for application registration and lookup
- **Resource Adaptor**  
Dependency injection
- **Container Managed Persistence**  
Uses Hibernate for Object Relational Mapping (ORM)
- **Container Managed Transactions**  
Initiates, commits and rolls-back transactions automatically
- **Annotations**  
Instead of separate config files, annotations are in-code tags to request container services
- **JMX Management via Web Browser**  
Used to start / stop / configure services
- **Aspect Oriented Programming**  
Interceptors to solve cross-cut application problems

# JBoss Directory Structure

## Jboss-4.0.5.GA

 bin	Scripts to start and stop the server.
 client	Java client application .jar files.
 docs	
 lib	JBoss .jar files. Don't add yours here.
 server	Different server configurations stored here.
 ni	
 conf	Config files for all services (like jboss-service.xml).
 data	Where JMS messages are persisted.
 deploy	Application code (AxS Resource Adaptor Archives).
 lib	JAR files needed for this particular server instance.
 log	Log files for this particular server instance.
 tmp	JBoss temporary storage for unpacked applications.
 work	Used by Tomcat for JSP pages.
 neplugins	AxS directory for plugin Service Archive files.

# JBoss Management



## JMX MBean View

MBean Name: **Domain Name:** jboss.beans  
**service:** JBossBeanDeployment  
**name:** 'jbossws14.sar#jbossws.beans'  
MBean Java Class: org.jboss.kernel.deployment.jboss.JBossBeanDeployment

[Back to Agent View](#)

[Refresh MBean View](#)

### MBean description:

Management Bean.

### List of MBean attributes:

Name	Type	Access	Value	Description
StateString	java.lang.String	R	Started	MBean Attribute.
State	int	R	3	MBean Attribute.
Name	java.lang.String	R	JBossBeanDeployment	MBean Attribute.

### List of MBean operations:

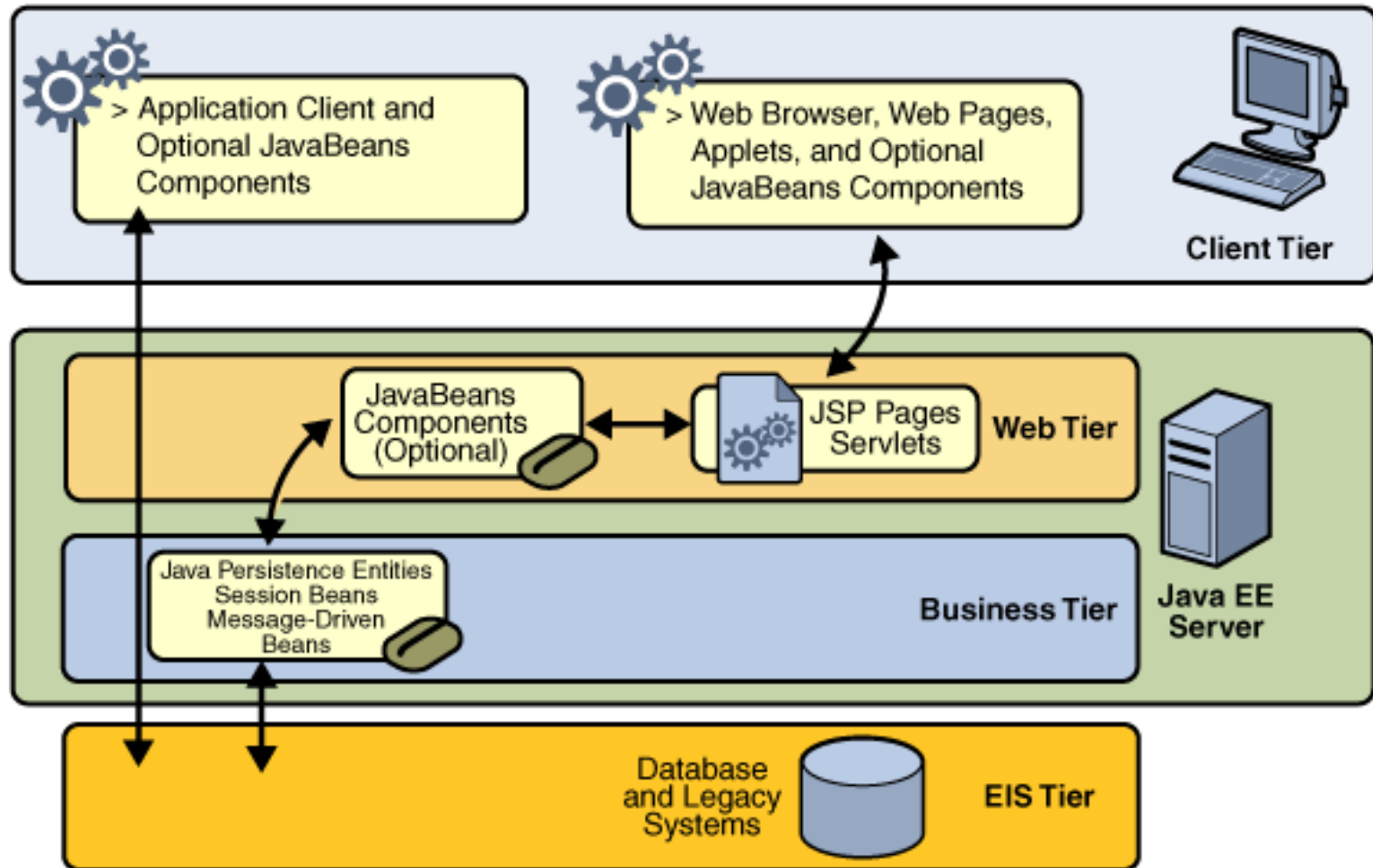
**void start()**

MBean Operation.

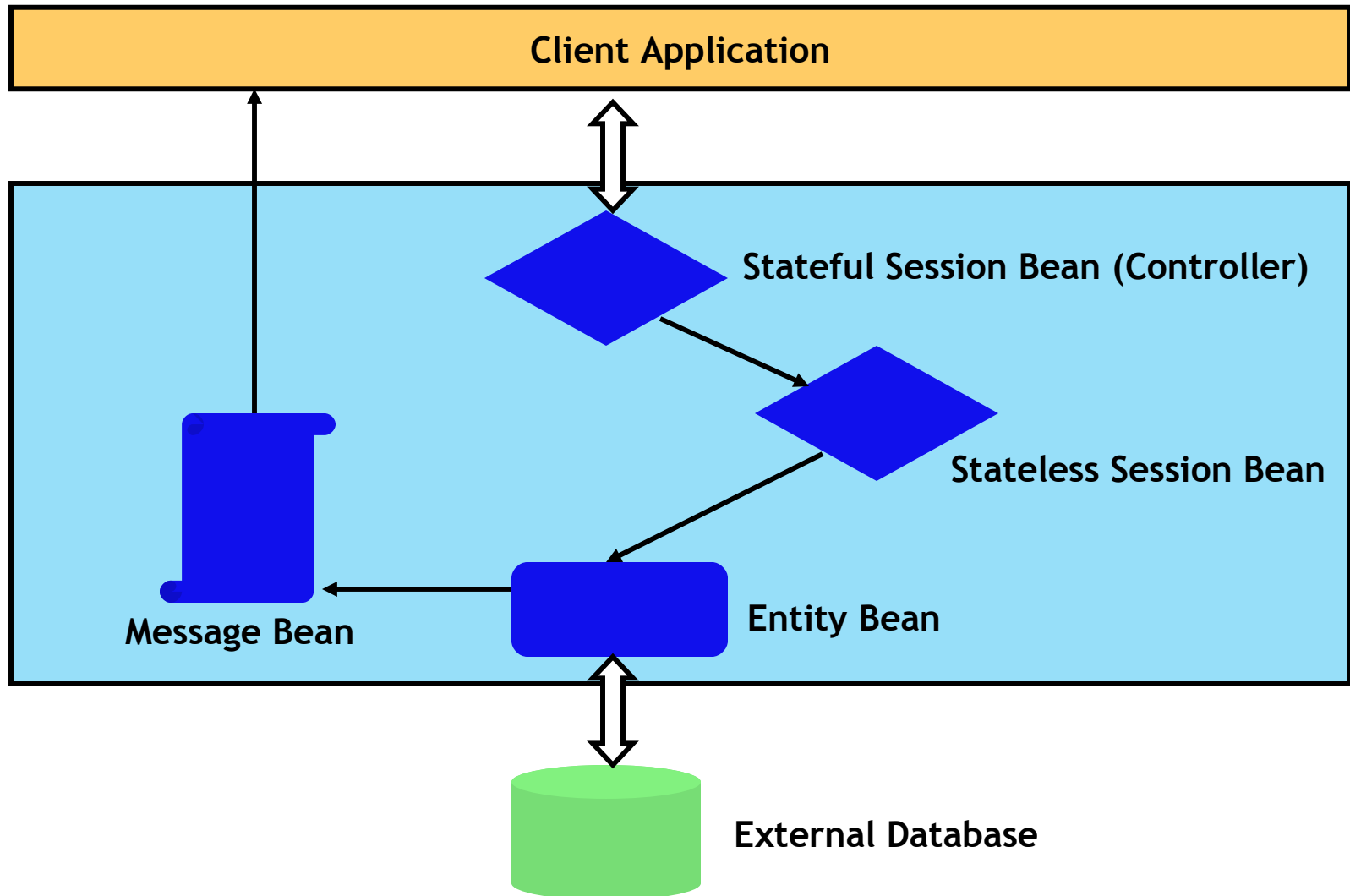
Invoke

- `http://<server>:8080/jmx-console`
- Configure JBoss or AxS services
- How JMX was *meant* to be used!

# Java Enterprise Edition Overview



# Enterprise Java Beans





# Annotations

- **@Stateful, @Stateless, @Entity, @MessageDriven**  
Identifies the type of EJB you want a class to represent
- **@Local, @Remote**  
Enables RMI access to your method (or removes it)
- **@PostConstruct, @PreDestroy, @PrePassivate, @PostActivate**  
Identifies an EJB lifecycle method for automatic callback
- **@EJB, @Resource**  
Injects dependencies (EJBs or other resources) into code
- **@TransactionAttribute(TransactionAttributeType.REQUIRED)**  
Guarantees data consistency and integrity for DB access
- **@SecurityDomain("domain"), @RolesAllowed({"admin"})**  
Authenticates users and restricts access based on security policies

# More Information

- **<http://www.jboss.org/docs/index>**  
Installation, clustering, hibernate, transactions, etc
- **<http://labs.jboss.com/jbossas/downloads>**  
Download a version of the application server
- **[http://java.sun.com/developer/technicalArticles/J2EE/intro\\_ee5/](http://java.sun.com/developer/technicalArticles/J2EE/intro_ee5/)**  
An introduction article that summarizes Java Enterprise Edition 5
- **<http://java.sun.com/javaee/5/docs/tutorial/doc/>**  
Very thorough and in-depth tutorial of Java EE 5
- **<http://java.sun.com/developer/technicalArticles/J2EE/jpa/>**  
How to use the Java Persistence API with or without EE
- **<http://java.sun.com/developer/technicalArticles/ebeans/ejbease/>**  
How to create Enterprise Java Beans