

# **JBoss 3.2 Deployment and Administration**

Meeraj Kunnumpurath

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# JBoss Server 3.x Features

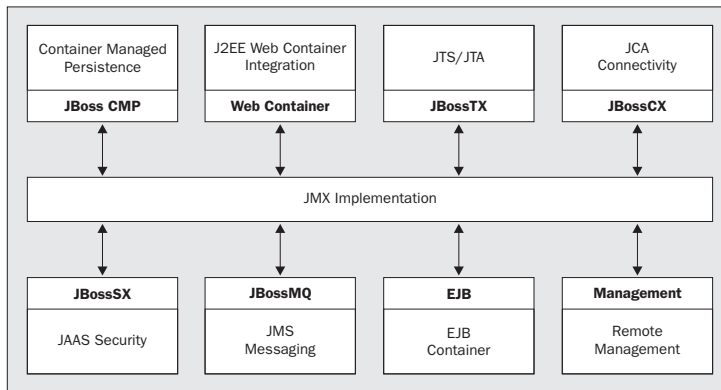
JBoss is an open-source and free Java 2 Enterprise Edition (J2EE) application server from the JBoss Group, implemented purely in Java. The JBoss Group, headed by Marc Fleury, is composed of more than 100 developers all over the world. The current major version of JBoss, 3.2, supports most of the J2EE 1.3 features.

## 1.1 JBoss Components

The JBoss server uses an extremely modular architecture built around **Java Management Extensions (JMX)**. Out of the box, JBoss provides a JMX implementation, an Enterprise JavaBean (EJB) container, and the basic JBoss server. JBoss also comes with a variety of pluggable components that implement the various J2EE standards such as Java Message Service (JMS), Java Naming and Directory Interface (JNDI), Java Authentication and Authorization Service (JAAS), Java Transaction API (JTA)/Java Transaction Service (JTS), and so on.

JBoss allows you to write your own components and plug them into the core JMX implementation, as long as the components you write comply with the JMX specification. This means, for example, if you're not happy with the transaction manager that comes with JBoss, you can write your own transaction manager component and plug it into the JMX bus. You can also add compliant third-party components to JBoss. You'll look at the JBoss JMX implementation in more detail in section 4.2, "JMX in JBoss."

The core components that come with JBoss, out of the box, are depicted in this diagram:



These components are as follows:

- ❑ **JMX Implementation**  
JBoss provides a JMX implementation for registering and managing components. This is the heart of the JBoss server. JBoss also provides a remote management facility for the JMX server and the components running within it.
- ❑ **EJB Container**  
This provides the container implementation for the EJB 1.1 and 2.0 specifications.
- ❑ **JBossMQ**  
This component provides the JMS implementation for messaging support.
- ❑ **JBossTX**  
This component provides transaction services using JTA and JTS.
- ❑ **JBossCMP**  
This component provides Container-Managed Persistence (CMP) for entity EJB components. JBoss supports both CMP 2.0 and CMP 1.1.
- ❑ **JBossSX**  
This is the JBoss component that provides JAAS-based security.
- ❑ **JBossCX**  
This component provides Java Connector Architecture (JCA) connectivity services.
- ❑ **Web Container**  
This component provides a pluggable level for integrating J2EE web containers. Currently two web containers that integrate with JBoss are Apache Tomcat and Jetty.

## 1.2 JBoss Versions

At the time of writing, the current major version of JBoss version is 3.2, and the minor version is 3.2.2. JBoss 3.2 supports most of the J2EE 1.3 features, including EJB 2.0, and comes with an integrated web container, Tomcat 4.1.x, which supports the Servlet 2.3 and JavaServer Pages (JSP) 1.2 specifications. JBoss 3.2 is also available with Jetty.

**Minor versions include primarily bug fixes and the occasional minor feature addition. This book focuses on the major 3.2 release of JBoss, so the minor version you have is relatively unimportant to the material covered in this book.**

## 1.3 J2EE Support

The latest version of JBoss, along with bundled web container (Jetty or Tomcat), supports the following J2EE Application Programming Interfaces (APIs):

- ❑ **EJB 2.0**  
JBoss CMP supports most of the EJB 2.0 features. It's also backward compatible and supports EJB 1.1 components. This is covered in detail in Chapters 17 and 18.
- ❑ **Servlet 2.3**  
Both Jetty and Tomcat support the Servlet 2.3 specification. This is covered in detail in Chapters 11, 12, and 16.
- ❑ **JSP 1.2**  
Both Jetty and Tomcat support the JSP 1.2 specification. This is covered in detail in Chapters 11, 12, and 16.
- ❑ **JMS 1.0.2**  
JBoss comes with a JMS provider that supports both point-to-point and publish/subscribe messaging, compliant with the JMS 1.0.2 specification. This is covered in detail in Chapter 9.
- ❑ **JTA 1.0.1/JTS 1.0**  
JBoss provides a JTA/JTS-compliant transaction manager that supports distributed transactions.
- ❑ **JCA**  
JBossCX provides a JCA implementation and uses JCA for connecting to all external resources including databases. This is covered in detail in Chapter 8.
- ❑ **JAAS 1.0**  
JBoss provides a highly flexible security service built on top of JAAS. This is covered in detail in Chapter 7.

- ❑ **JavaMail 1.2**

JBoss provides an MBean service for configuring JavaMail sessions. This is covered in detail in Chapter 10.

- ❑ **JNDI**

JBoss provides a highly configurable naming provider that is capable of using multiple protocols including Remote Method Invocation (RMI) and Hypertext Transfer Protocol (HTTP). This is covered in detail in Chapter 6.

- ❑ **RMI-IIOP**

JBoss supports RMI invocation over Internet Inter-Orb Protocol (IIOP).

**JBoss isn't a J2EE 1.3–certified application server. However, the controversies related to JBoss and J2EE certification are mainly political and not technical, and they have been well documented.**

## 1.4 Custom Features

In addition to the aforementioned J2EE specific features, JBoss supports the following features:

- ❑ Fault tolerance and load balancing using clusters.
- ❑ Web services with an integrated Axis engine.
- ❑ Logging configuration based on Log4J.
- ❑ EJB invocation over Secure Sockets Layer (SSL).
- ❑ The JBoss server is built around a JMX bus. JBoss uses JMX MBeans for all its configuration and supports deployment of user JMX MBeans within the JBoss environment.
- ❑ Java Specification Request (JSR) 77 defines a management information model for the J2EE platform. The model is designed to interoperate with many management systems and protocols.

This chapter presented a high-level overview of the various features available with JBoss. In the next chapter, you'll look into the details of installing JBoss and the JBoss directory structure.