

# JBoss Application Server Course Content

## 1. Boss Introduction and Installation

- Java EE Overview and Architecture
- JBoss Background and Overview
- Basic JBoss AS Architecture
- Downloading and Installing JBoss AS (zip and graphical installation)
- Starting and Stopping JBoss

## 2. JBoss AS Structure and Architecture

- JBoss AS Directory and File Structure
- JBoss Standard Configurations and Custom Configurations
- Configuration Directory and File Structure
- JMX and the JBoss JMX Microkernel
- The JMX MBean Server in JBoss
- JBoss AS Services and Service Definitions
- The Admin Consoles (JMX and Web Consoles)

## 3. Deployment

- Java EE Application Structure (Jars, Wars, Ears, Sars)
- JBoss AS Deployers

- Deploying and Redeploying Archives
- Expanded Deployments and Nested Deployments
- Deployment Dependencies and Ordering (Explicit and Implicit)
- JBoss Classloading, and Effect on Deployment

#### 4. Web Container, JNDI, and Datasources

- Web Container Overview
- The server.xml and other config file
- Configuring the HTTP, HTTPS, and AJP Connectors
- JNDI and Naming Overview
- JBoss Naming Overview and Configuration
- JNDI Client Configuration
- DataSource and JCA Overview
- DataSource Configuration and \*-ds.xml Files
- The Hypersonic Database and DefaultDS

#### 5. Other Services

- Remote Object Invokers
- Unified Invoker, and RMI Invoker
- HTTP Invoker
- JMS - Java Message Service

- JMS Overview
- JBossMQ Overview
- JBossMQ Configuration
- JBossMQ Invokers
- Configuring Queues and Topics
- Web Services
- Other Services - EJB, JMX Invoker Adapter, RMI Classloading
- The ServiceBindingManager

## 6. Security

- Java EE Security Overview
  - Authentication, Authorization, Identity
  - Security Roles
  - Web App Security Constraints
- JBoss AS Security Architecture
- JBoss AS Security Domains Overview
- Defining Security Domains
- JBoss AS Login Modules - Overview
- Using UsersRolesLoginModule
- Password Hashing
- Using DatabaseServerLoginModule

- Other Login Modules (LDAP, etc)
- Encrypting Datasource Passwords
- Enabling SSL
  - HTTPS
  - RMI Over SSL (EJB usage)
  - Other Uses of SSL
- Securing Other JBoss AS Services - Consoles, Invokers, and others

## 7. Tuning JBoss

- JBoss AS and the Java Virtual Machine (JVM)
  - Tuning The Heap (Memory Usage)
  - Garbage Collection (GC) Overview and Generational GC
  - Tuning GC
- Tuning the Web Tier (Tomcat)
  - Connector Tuning
  - Other Optimizations
- Database Connection Tuning
- RMI Invoker and Messaging Tuning
- Other JBoss AS Optimizations
- Creating Minimal Configurations

## 8. Clustering

- Overview (Load Balancing and Fault Tolerance, State Replication)
- JBoss AS Clustering and JGroups Overview
- Cluster Configuration and Partitions
- Troubleshooting Multicast Issues
- Farming Service
- Clustered Naming (HA-JNDI)
- Clustered EJB
- Clustered HTTP - Replicated Sessions