

JBoss 3.2 Deployment and Administration

Meeraj Kunnumpurath

JBoss 3.2 Deployment and Administration

Copyright © 2004 by Meeraj Kunnumpurath

All rights reserved. No part of this work may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage or retrieval system, without the prior written permission of the copyright owner and the publisher.

ISBN (pbk): 1-59059-281-6

Printed and bound in the United States of America 12345678910

Trademarked names may appear in this book. Rather than use a trademark symbol with every occurrence of a trademarked name, we use the names only in an editorial fashion and to the benefit of the trademark owner, with no intention of infringement of the trademark.

Technical Reviewer: Craig Berry

Editorial Board: Dan Appleman, Craig Berry, Gary Cornell, Tony Davis, Steven Rycroft, Julian Skinner, Martin Streicher, Jim Sumser, Karen Watterson, Gavin Wray, John Zukowski

Assistant Publisher: Grace Wong

Project Manager: Tracy Brown Collins

Copy Editor: Kim Wimpsett

Production Manager: Kari Brooks

Production Editor: Kelly Winquist

Proofreader: Lori Bring

Compositor: Molly Sharp

Indexer: Bill Johncocks

Cover Designer: Kurt Krames

Manufacturing Manager: Tom Deboliski

Distributed to the book trade in the United States by Springer-Verlag New York, Inc., 175 Fifth Avenue, New York, NY, 10010 and outside the United States by Springer-Verlag GmbH & Co. KG, Tiergartenstr. 17, 69112 Heidelberg, Germany.

In the United States: phone 1-800-SPRINGER, email orders@springer-ny.com, or visit <http://www.springer-ny.com>. Outside the United States: fax +49 6221 345229, email orders@springer.de, or visit <http://www.springer.de>.

For information on translations, please contact Apress directly at 2560 Ninth Street, Suite 219, Berkeley, CA 94710. Phone 510-549-5930, fax 510-549-5939, email info@apress.com, or visit <http://www.apress.com>.

The information in this book is distributed on an “as is” basis, without warranty. Although every precaution has been taken in the preparation of this work, neither the author(s) nor Apress shall have any liability to any person or entity with respect to any loss or damage caused or alleged to be caused directly or indirectly by the information contained in this work.

The source code for this book is available to readers at <http://www.apress.com> in the Downloads section. You will need to answer questions pertaining to this book in order to successfully download the code.

Contents

About the Author	ix
Introduction	xi
Chapter 1 JBoss Server 3.x Features	1
1.1 JBoss Components	1
1.2 JBoss Versions	3
1.3 J2EE Support	3
1.4 Custom Features	4
Chapter 2 Installing JBoss	5
2.1 Installing JBoss	5
2.2 JBoss Directory Structure	6
2.3 Server Configuration Sets	10
Chapter 3 Operating JBoss	17
3.1 Starting JBoss	17
3.2 Shutting Down JBoss	28
Chapter 4 The JBoss Configuration Architecture	29
4.1 An Overview of JMX	29
4.2 JMX in JBoss	35
4.3 Accessing the JMX Agent	44
Chapter 5 Runtime Properties	49
5.1 JBoss Classloading	49
5.2 Setting the Classpath	54
5.3 Setting JVM Options	55
Chapter 6 Configuring Naming	57
6.1 The JBoss Naming Service	57
6.2 JNDI Client Configuration	58
6.3 JNDI View	60
6.4 External JNDI Namespaces	61
6.5 JNDI Link References	63
6.6 HTTP-Based JNDI	64
Chapter 7 Configuring Security	65
7.1 JBoss Security Features	66
7.2 The JBoss Security Layer	67
7.3 JBossSX Implementation	68
7.4 Security Proxies	93
7.5 Enabling SSL	94

Chapter 8	Configuring JCA and Datasources	97
8.1	JCA in JBossCX.....	98
8.2	JBossCX and Datasources	105
Chapter 9	Configuring JBossMQ.....	113
9.1	JBossMQ Architecture	113
9.2	Invocation Layer	114
9.3	Destination Manager	119
9.4	Message Cache.....	121
9.5	State Manager.....	123
9.6	Persistence Manager.....	125
9.7	Destinations	128
9.8	Security Manager.....	130
9.9	Administering JMS.....	131
Chapter 10	Configuring JavaMail.....	137
10.1	The Mail Service MBean.....	137
10.2	Configuring the Mail Service.....	139
Chapter 11	Configuring Jetty	141
11.1	AbstractWebContainer.....	142
11.2	Configuring Jetty	143
Chapter 12	Configuring Tomcat	159
12.1	Configuring Tomcat	159
Chapter 13	Configuring Clusters	179
13.1	An Overview of Clustering.....	179
13.2	Clustering Requirements	182
13.3	JBoss Clustering	183
Chapter 14	Configuring Logging	197
14.1	The Logging MBean	197
14.2	Log4J Overview.....	198
14.3	Configuring Logging.....	201
14.4	Administering Logging	214
14.5	TRACE Priority	215
Chapter 15	The JBoss Deployment Architecture.....	217
15.1	Deployers	217
15.2	Hot Deployment.....	219
15.3	The Deployment Process	223
Chapter 16	Configuring WAR Deployment	227
16.1	The JBoss Web Deployment Descriptor	227

Chapter 17 Developing EJBs with JBoss	235
17.1 Container Configuration	236
17.2 Invoker Proxy Binding	240
17.3 Container Configuration Details	245
17.4 Bean-Level Configuration	251
17.5 EJB Security	258
Chapter 18 Configuring CMP 2.0	261
18.1 CMP Configuration Files	261
18.2 Mapping EJB Names	266
18.3 Datasource Mapping	267
18.4 Datasource	273
18.5 Create and Remove Table	274
18.6 Table Name	276
18.7 Read-Only	276
18.8 Mapping CMP Fields	277
18.9 Mapping Relationships	284
18.10 Mapping Queries	292
18.11 Tuning CMP Performance	298
18.12 Optimistic Locking	303
18.13 Auditing	306
18.14 Locking and Concurrency	307
18.15 Entity Commands	310
Chapter 19 EAR Configuration	313
19.1 The EAR Deployer	313
19.2 The JBoss EAR Deployment Descriptor	314
Chapter 20 Additional JBoss Configuration	319
20.1 Scheduling Tasks	319
20.2 System Properties	324
Index	327