

Index

COPYRIGHTED MATERIAL

Index

A

activeio **directory**, 85

ActiveMQ

architecture, 391–393

Broker plan

ActiveMQ.cache GBean, 397

ActiveMQ.jdbc GBean, 397

ActiveMQ.journal GBean, 397

ActiveMQManager element

customizing, 397–401

dependencies element, 396

environment element, 396

geronimo.tcp.default, 397

geronimo.vm.localhost, 397

hidden-classes element, 396

moduleID element, 396

non-overridable-classes element, 396

SystemProperties, 397

Business tier, 60–61

clustering, 392

configuration, 156–157, 401–405

connectors, 392

controlling, 156–157

deploying

command-line deployer, 401–403

management console, 404–405

DR Clustering, 392

DR (disaster recovery), 392

EIS tier, 62–63

Geronimo console and, 405–406

Network Services, 392

Queue Region, 391

resource adapter

configuration, 407–421

contents, 412–413

deployment plan, 408–409

JMS resources, 406–407

STOMP (Streamlining Text Oriented
Messaging Protocol), 392

Topic Region, 391

activemq **directory**, 85

<adminobject> **element**, 428, 429

adminobject **item Resource Adapter
plan**, 286

adminobject-class **item Resource
Adapter plan**, 286

adminobject-instance **item Resource
Adapter plan**, 286

adminobject-interface **item Resource
Adapter plan**, 286

Agent level, JMX, 120

antlr **directory**, 85

**Apache Group, Apache Software Foundation
and**, 41

Apache Server, history of, 40

ASF (Apache Software Foundation)

introduction, 40

Web site, 1

AppController, 248

application

clients, support for, 68–69

deploying, Web console and, 164–166

Application clients, deploying, 430–432

Application EARs portlet, 22

application modules, starting, 27

applications

client application container, 274

deployment

deployer tool, 16–20

EAR file, 16

undeploying, 27

Web console, 20–23

enterprise

deployed, 166–168

EJB deployment and, 60

listing running, 21

security in

EJB security, 376–378

security declaration, 378–388

security descriptor, 378–388

Web security, 374–375

undeploying, 27

ASF (Apache Software Foundation)

introduction, 40

Web site, 1

asm directory, 85

assemblies

binding, 79

creating, 79

introduction, 78

modules comparison, 79

repositories and, 79

<assembly-description> subelements, 254

attributes, configuration, Web console, 36–37

authentication

description, 339

introduction, 337

AuthorConnectionsPool, 269

AuthorEntityCMPBean, 248

authorization

description, 339–340

introduction, 337

JACC and, 344–345

security policies and, 339

AuthorsBean, 248

authors.jsp, 247

AuthorsLister Java class, 311

AuthorsLocator Java class, 311, 321

AuthorWS Java class, 311, 321

auto deployment, Hot Deployer, 445

axis directory, 85

AXIS, Web services, 64

B

bin directory

client.jar, 81

deployer.jar, 81

server.jar, 81

shutdown.jar, 81

upgrade.jar, 81

binary distributions

introduction, 5

Jetty, 5–6

Tomcat, 5–6

bindings, IDL, 325

blocking-timeout-milliseconds item

Resource Adapter plan, 286

builds

introduction, 3

latest milestone build, 4

latest unstable build, 4

Business tier

ActiveMQ, 60–61

components deployable, 58–59

deployable module, 59

EJBs, deploying, 60

OpenEJB, 60

Business tier EJBs, deploying, openejb-jar.xml, 426–427

C

<callback-handler> **element**, 432

CAR (configuration archive), modules, 87–89

CertificateChainLoginModule, 360

CertificatePropertiesFileLogin
Module, 360

cglib **directory**, 85

classes, Java

AuthorsLister, 311

AuthorsLocator, 311, 321

AuthorsWS, 321

AuthorWS, 311

GetAuthors, 311, 321

GetAuthorsResponse, 311, 321

client application container, 274

client.jar, 81

CMP entity bean, Derby databases, 260–262

command-line deployer

ActiveMQ deployment, 401–405

commands

deploy, 439

distribute, 442–443

help, 439

install-plugin, 444

list-modules, 442

list-targets, 442

login, 441–442

redeploy, 440

search-plugins, 443

start, 441

stop, 441

undeploy, 440

JSR-88 and, 101–102

options

-driver, 438

-host, 437

-offline, 438

-password, 438

-port, 437

-syserr, 438

-uri, 437

-user, 438

-verbose, 438

common-beanutils **directory**, 85

common-cli **directory**, 85

common-digester **directory**, 85

commons-collections **directory**, 85

commons-discovery **directory**, 85

commons-el **directory**, 85

commons-logging **directory**, 85

commons-modeler **directory**, 85

concurrent **directory**, 85

config-property-setting **item Resource
Adapter plan**, 286

config.ser **file**, 88

configuration

assembly-time, 35

attributes modification, Web console, 36–37

PostgreSQL, clustered, 299–300

run-time, 35

transactions, 262–265

configuration archive (CAR), modules, 87–89

config.xml **file**

connectors, Web containers, 189–190

GBean components, 31–34

installation and, 8–10

JavaMail system module and, 266–267

module configuration, 30–31

<modules> subelements, 30

ORB parameters, 335

connection-definition **item Resource**

Adapter plan, 285

connectiondefinition-instance **item**

Resource Adapter plan, 285

connectionfactory-interface **item**

Resource Adapter plan, 285

connectionmanager **item Resource Adapter
plan**, 285

connector **item Resource Adapter plan**, 284

ConnectorGBean, 218

container services

configuration management, 53, 72

manageability, 53, 72

naming and directory, 53, 70–71

security, 53, 71

transaction, 53, 71

<container-config> element

<container-config> **element, 425**

container-managed transactions

description, 262

JavaMail, 267

container-managed-security **item**

Resource Adapter plan, 285

<context-root> **element, 425**

ControllerServlet, **16**

CORBA

clients, support, 332–334

GIOP (General Inter-ORB Protocol), 327

IDL (Interface Definition Language), 325–326

IOP (Internet InterORB Protocol), 327

interoperability, 67–68

Java-based, 327–328

ORB (Object Request Broker), 326–327, 335

parent module dependency, 334

security, 329

Web services comparison, 324–325

CSiv2

GBeans, 329

security

client-side, 331–332

Geronimo support, 329

server-side, 330

CSS GBeans

NoSecurity, 332

NoSecurityIdentityTokenCert, 332

NoSecurityIdentityToken

Principal, 332

SSLClientCert, 332

SSLClientPassword, 332

SSLIdentityTokenCert, 332

SSLIdentityTokenPrincipal, 332

D

Database Manager portlet, 173

database pools, Web console, 291–293

databases

connections pool, 268–274

embedded, database information, 172–173

pools, installing, 162–163

<db-syntax-factory> **element, 427**

debug console

architecture, 118

filtering output, 133–135

installation, 128

jconsole, JMX console, 129–131

url for access, 132–133

declarative security, 339

<default-principal> **element, 378–379**

dependencies **item Resource Adapter plan, 284**

deploy **command, 11, 100–101, 439**

deploy **directory, 81**

deploy.bat, **17**

deployer

binary, 100

commands

deploy, 106

distribute, 107

help, 108

install-plugin, 109

list-modules, 108

list-targets, 108

login, 107

redeploy, 107

search-plugins, 109

start, 106

stop, 107

undeploy, 107

--driver option, 105

--host option, 105

JDBC resources, 290–291

offline installation, 103–104

--offline option, 106

--password option, 105

--port option, 105

run-time state information, 110–111

--syserr option, 105

--uri option, 105

--user option, 105

--verbose option, 106

deployer **command, syntax, 104**

deployer tool

- application deployment, 17–20
- deployment information, 18
- installation verification, 11

deployer.jar, **81**

deploy.jar **file, deploy command, 104**

deployment

- applications
 - deployer tool, 17–20
 - EAR file, 16
 - Web console, 20–23
 - Web console and, 164–166
- architecture
 - assignment of module IDs, 181–182
 - deployed module in repository, 180–181
- auto deployment, Hot Deployer, 445
- Business tier EJBs, openejb-jar.xml, 426–427
- containers, 259–260
- deployable modules, 176
- descriptors
 - Geronimo-specific, 25–26
 - J2EE descriptors, 175–178
 - standard, 24–25
- EAR file, 16
- external deployment plan, 26
- GUI Web console, 444–445
- Hot Deployer, 444–445
- JDBC plan for PostgreSQL, 288–289
- JDBC, resources, 289–297
- Maven plug-in, 111–115
- modules, to server instance, 100–101
- plans
 - internal to module, 179–180
 - naming, 178–179
- stateless session EJB as Web service, 320–324
- troubleshooting
 - console output, 136–137
 - deployment plan correction, 139–140
 - log file, 137–139

- querying components from deployed application, 140–142
- viewing attributes of managed object, 142–144
- web applications, Geronimo-specific plan, 190–191
- Web service WAR on Geronimo, 311–320
- Web services, 318–319

deployment descriptors

- Geronimo-specific, 25–26
 - introduction, 24–26
 - J2EE specification schemas, 432–433
 - standard, 24–25
 - Web containers, namespaces, 193–199
 - web services, webservices.xml, 312–315
- deploy.sh, **17**

Derby

- CMP entity bean, 260–262
- EIS tier, 63
- <description> **element, 379**
- DirectConfigurationEntry **GBean, 347–348**

directories

- installation directory
 - bin directory, 80–81
 - deploy directory, 80, 81
 - docs directory, 80, 81
 - lib directory, 80, 81–83
 - repository directory, 80, 83–90
 - schema directory, 80, 90–93
 - var directory, 80, 93–97
- repository, top-level directories, 85
- <distinguished-name> **element, 379**

distribute command, deployer, 107, 442

Distributed Services level, JMX, 121

distributions

- binary, 5
- source code, 5

docs directory, 81

download page, 3

-driver **option, command-line deployer, 438**

--driver **option, deployer, 105**

E

EAR (Enterprise Application Archive) files

- deployment descriptors, 24–26
- introduction, 16
- modules, local references, resolving, 245–246

EIS tier

- ActiveMQ, 62–63
- Derby, 63
- geronimo-ra.xml, 427–429
- introduction, 61
- JavaMail, 63

EJB JAR files

- deployment descriptors, 25
- describing, 251–252
- external references, 244–245
- `<ejb-class>` **element**, 252
- `ejb-jar.xml`, **deployment descriptor**, 248–251
- `<ejb-name>` **element**, 252
- `<ejb-ql-compiler-factory>` **element**, 427

EJBs

- access
 - external, 242
 - internal, 242
- configuration, 259
- deploying, enterprise application and, 60
- EJB JAR, describing, 251–252
- EJB-based Web service implementation, 321–322
- `<ejb-local-ref>`, 259
- `<ejb-ref>`, 259
- external classes, 259
- OpenEJB2 and, 242
- references
 - mapping external, 258
 - mapping internal, 258
 - resolving in Geronimo, 257
- session beans, 58

elements

- `<abstract-schema-name>`, 253
- `<activation-config>`, 254
- `<adminobject>`, 428

- `<callback-handler>`, 432
- `<cmp-field>`, 253
- `<cmp-version>`, 253
- common to session and entity, 252
- `<container-config>`, 425
- `<context-root>`, 425
- `<db-syntax-factory>`, 427
- `<default-principal>`, 378–379
- `<description>`, 379
- `<distinguished-name>`, 379
- `<ejb-class>`, 253
- `<ejb-name>`, 253
- `<ejb-ql-compiler-factory>`, 427
- `<enforce-foreign-key-constraints>`, 427
- `<enterprise-beans>`, 427
- `<ext-module>`, 430
- `<login-domain-principal>`, 380
- `<login-module>`, 365–367
- `<login-module-ref>`, 364–365
- `<message-destination-link>`, 254
- `<message-destination-type>`, 254
- `<messaging-type>`, 254
- `<module>`, 430
- `<named-username-password-credential>`, 380
- `<naming:cmp-connection-factory>`, 427
- `<naming:ejb-ref>`, 432
- `<naming:gbean-ref>`, 431
- `<naming:message-destination>`, 425, 427, 432
- `<naming:resource-env-ref>`, 432
- `<naming:resourceref>`, 432
- `<naming:service-ref>`, 432
- `<naming:web-container>`, 425
- `<persistence-type>`, 253
- `<prim-key-class>`, 253
- `<primkey-field>`, 253
- `<principal>`, 381
- `<realm-name>`, 432
- `<realm-principal>`, 381
- `<reentrant>`, 253

- <relationships>, 427
- <resource>, 432
- <resourceadapter>, 428
- <role>, 382
- <role-mapping>, 382
- <security>, 383
- <security-identity>, 252, 253, 254
- <security-realm-name>, 425
- <security-role-ref>, 252, 253
- <security:security>, 425, 427, 430
- <session-type>, 252
- <sys:client-environment>, 431
- <sys:environment>, 425, 426, 428, 430
- <sys:gbean>, 425, 427, 428, 430, 432
- <sys:server-environment>, 431
- <transaction-type>, 252, 254
- email**
 - JavaMail, 265–266
 - MailSession GBean, 266
- embedded databases**
 - Database Manager portlet, 173
 - information, obtaining, 172–173
- <enforce-foreign-key-constraints>
 - element, 427**
- EngineGbean, **223**
- Enterprise Application Archive files.**
 - See EAR files**
- enterprise applications**
 - client applications, 168
 - deploying, 429–430
 - EJB deployment and, 60
 - EJB JARs, 168
 - J2EE Connectors, 168
 - system modules, 168
 - Web applications, 168
- <enterprise-beans> **element**
 - <entity> subelement, 251
 - <message-driven> subelement, 251
 - <session> subelement, 251
- entity beans**
 - CMP
 - deploying, 248–254
 - Derby databases, 260–262
 - elements
 - <abstract-schema-name>, 253
 - <cmp-field>, 253
 - <cmp-version>, 253
 - common in session beans, 251–252
 - <persistence-type>, 253
 - <prim-key-class>, 253
 - <primkey-field>, 253
 - <reentrant>, 253
 - <security-identity>, 253
 - <security-role-ref>, 253
 - entity EJBs**
 - deploying, example, 247–265
 - introduction, 59, 241
 - environment **item Resource Adapter plan, 284**
 - external references**
 - EJB JAR files, 244–245
 - mapping, 246–247
 - <ext-module> **element, 430**
- F**
 - failed state, modules, 29**
 - FileAuditLoginModule, **360**
 - foo() **method, 309**
- G**
 - GBean components, config.xml file, 31–34**
 - gbean **item Resource Adapter plan, 286**
 - GBeans**
 - ActiveMQ, 397
 - ActiveMQ.cache, 397
 - ActiveMQ.jdbc, 397
 - ActiveMQ.journal, 397
 - AJP13Connector, 204–205
 - configuration management, 77
 - ConnectorGBean, 218
 - description, 76
 - DirectConfigurationEntry, 342, 347–348
 - EngineGbean, 223

GBeans (continued)

GBeans (continued)

- GenericSecurityRealm, 350
- GeronimoLoginConfiguration, 342
- GeronimoSecurityRealm, 342
- HostGBean, 225
- HTTPConnector, 200–201
- HTTPSConnector, 202–203
- HttpsConnectorBean, 220
- IdentityTokenNoSecurity, 330
- JaasLoginModuleUse, 354–355
- JettyContainerImpl, 200
- lifecycle management, 78
- LoginModuleGBean, 352–353
- MailSession, 266
- manageability, 78
- ManagerGBean, 227
- methods, 76
- modules and, 77–78
- NCSARequestLog logger bean, 205
- NoSecurity, 332
- NoSecurityIdentityTokenCert, 332
- NoSecurityIdentityToken
 - Principal, 332
- properties, 76
- RealmGBean, 227
- SecurityService, 386–388
- ServerRealmConfigurationEntry, 348–349
- SSLClientCert, 330, 332
- SSLClientCertIdentityToken, 330
- SSLClientPassword, 330, 332
- SSLIdentityToken, 330
- SSLIdentityTokenCert, 332
- SSLIdentityTokenPrincipal, 332
- Tomcat
 - ConnectorGBean, 218
 - EngineGbean, 223
 - HostGBean, 225
 - HttpsConnectorBean, 220
 - ManagerGBean, 227
 - RealmGBean, 227
 - TomcatContainer, 218
 - ValveGBean, 228

- TomcatContainer, 218

- ValveGBean, 228

General Inter-ORB Protocol (GIOP), 327

- GenericSecurityRealm, 341

- GenericSecurityRealm **GBean, 350–352**

Geronimo

- Apache spirit and, 42

- project timeline, 43–47

- security architecture, 337

- as top-level ASF project, 42–48

- geronimo **directory, 85**

Geronimo server, installation, running, 10–11

- geronimo-application-client.xml

- namespaces, 431

- top-level elements

- <callback-handler>, 432

- <naming:ejb-ref>, 432

- <naming:gbean-ref>, 431

- <naming:message-destination>, 432

- <naming:resource-env-ref>, 432

- <naming:resourceref>, 432

- <naming:service-ref>, 432

- <realm-name>, 432

- <resource>, 432

- <sys:client-environment>, 431

- <sys:gbean>, 432

- <sys:server-environment>, 431

- geronimo-application.xml

- description, 424

- namespaces, 429

- top-level elements

- <ext-module>, 430

- <module>, 430

- <security:security>, 430

- <sys:environment>, 430

- <sys:gbean>, 430

- geronimo-client.xml, **424**

- GeronimoLoginConfiguration, **346**

- GeronimoPasswordCredentialLogin
 - Module, **360**

- geronimo-properties-realm **security service, 209**

geronimo-ra.xml
 description, 424
 namespaces, 428
 top-level elements
 <adminobject>, 428
 <resourceadapter>, 428
 <sys:environment>, 428
 <sys:gbean>, 428
 geronimo-spec **directory, 85**
Geronimo-specific deployment descriptors, 25–26
 geronimo-web.xml
 description, 423
 introduction, 190–191
 top-level elements
 <container-config>, 425
 <context-root>, 425
 JNDI Environment References, 425
 <naming:message-destination>, 425
 <naming:web-container>, 425
 <security-realm-name>, 425
 <security:security>, 425
 <sys:environment>, 425
 <sys:gbean>, 425
 getAuthors() **method, invoking, Web service client and, 319**
 GetAuthors **Java class, 311, 321**
 GetAuthorsResponse **Java class, 311, 321**
GIOP (General Inter-ORB Protocol), 327

H

hardware, platform requirements, 6–7
help command, deployer, 108, 439
 hidden-classes **item Resource Adapter plan, 284**
 <home> **element, 252**
 --host **option, deployer, 105, 437**
 HostGBean, **225**
Hot Deployer, 445
 howl **directory, 85**
HTTP, Web services and, 306–307
 HttpsConnectorBean, **220**

I
 IdentityTokenNoSecurity **TSS GBean, 330**
IDL (Interface Definition Language), CORBA, 325–326
 idle-timeout-minutes **item Resource Adapter plan, 286**
IIOP (Internet InterORB Protocol), 327
 implemented-interface **item Resource Adapter plan, 285**
Install New Applications portlet, 22
installation
 config.xml file, 8–10
 debug console, 128
 Geronimo server, running, 10–11
 hardware requirements, 6–7
 JVM and, 7–8
 offline, deployer, 103–104
 plug-ins, 109–110
 verification, 11–12
installation directory
 bin directory
 client.jar, 81
 deployer.jar, 81
 introduction, 80
 server.jar, 81
 shutdown.jar, 81
 upgrade.jar, 81
 deploy directory, 81
 docs directory, 81
 lib directory
 endorsed subdirectory, 83
 ext subdirectory, 83
 introduction, 81–82
 repository directory
 artifacts, 83–84
 coordinates, 83–84
 top-level directories, 85
 schema directory, 90–93
 var directory
 activemq directory, 93
 catalina directory, 93, 94

installation directory (continued)

- config directory, 93, 94
- derby directory, 93, 97
- installed modules, preventing startup, 95
- installed modules, startup order, 95
- log directory, 93, 97
- module configuration, overriding GBean attributes, 96
- security directory, 93, 97
- shared directory, 94
- tmp directory, 94
- txlog directory, 94

install-plugin command, deployer, 109, 444

Instrumentation level, JMX, 119

Interface Definition Language (IDL), CORBA, 325–326

interface proxy/tie component (JAX-RPC), 309

Internet InterORB Protocol (IIOP), 327

interoperability

- CORBA, 67–68
- J2EE EIS tier and, 67

IP addresses, service listeners, 34–35

J

JAAS (Java Authentication and Authorization Service)

- DirectConfigurationEntry GBean, 342
- GeronimoLoginConfiguration GBean, 342
- GeronimoSecurityRealm GBean, 342
- introduction, 337
- login coordinator, 343
- login modules
 - chaining, 342
 - configuration, 346–352
 - introduction, 341
 - JaasLoginModuleUse, 342
 - J2SE, configuration, 345–346
 - LoginModule, 341
 - ServerRealmConfigurationEntry, 342
 - web site, 338
- JaasLoginModuleUse **GBean, 354–355**

JACC (Java Authorization Contract for Containers)

- authorization and, 344–345
- introduction, 337
- web site, 338

JAR files, deployment descriptors, 25–26

Java, classes

- AuthorsLister, 311
- AuthorsLocator, 311, 321
- AuthorWS, 311, 321
- GetAuthors, 311, 321
- GetAuthorsResponse, 311, 321

JavaMail

- config.xml and, 266–267
- container-managed session
 - linking to, 267–268
 - referencing, 267
- EIS tier, 63
- IMAP and, 265
- POP and, 265
- SMTP and, 265
- transports, 265–266

Java Management Extensions. See JMX

Java Message Service. See JMS

Java Virtual Machine. See JVM

JAX-RPC

- interface proxy/tie component, 309
- mapping files, 321
- Web services, 307–309
- web.xml deployment descriptor, 315–316

JCA (J2EE Connector Architecture), RAR file, 280–281

jconsole

- connecting Geronimo, 130–131
- starting, 130

JDBC

- deployment plan, PostgreSQL, 288–289
- drivers, downloading, 293–294
- resources
 - configuration, 281–289
 - deploying, 289–297

jdom **directory, 85**

J2EE (Java 2 Enterprise Edition)

Application clients, deploying, 430–432
 deployment descriptors, XML schema, 177
 J2EE compliant release of Geronimo, 4
 parent keys, mandatory, 125
 schemas, deployment descriptors, 432–433
 software components
 building phase, 26
 configuration phase, 26
 deployment descriptors, 24–26
 distribution phase, 27
 introduction, 23
 loading, 26
 starting, 26
 stopping, 26

tiers

Business, 54, 58–61
 Client support, 54
 EIS, 54, 61–63
 Interoperability, 54
 Web, 54, 55–58
 Web services, 54, 63–66

Jetty

GBeans

AJP13Connector, 204–205
 HTTPConnector, 200–201
 HTTPSCConnector, 202–203
 JettyContainerImpl, 200
 NCSARequestLog logger GBean, 205

introduction, 5–6

Little-G and, 6

Web tier, 58

JMS (Java Message Service)

MDBs and, 59

resource groups

Geronimo console and, 415–421
 introduction, 163–164
 options, 416

resources

ActiveMQ, 406–407
 connection factories, 406, 418
 deploying, 413–415

destinations, 407

sessions, 407

JMX (Java Management Extensions)

Agent level, 120–121

debug console and, 118

Distributed Services level, 120–121

Instrumentation level, 119

introduction, 118

login, remote service, 343–344

JSP, Web tier and, 56–57**JSR-77**

domains, 127

manageable states, 127–128

MEJB, 121–123

object names, 123–127

JSR-88

benefits of, 102–103

command-line deployer and, 101–102

juddi **directory, 85**junit **directory, 85****JVM (Java Virtual Machine)**

installation and, 7–8

remote management, 130

L**LDAPLoginModule, 357**lib **directory**

endorsed subdirectory, 81–83

ext subdirectory, 81–83

overview, 81–83

licenses

Apache License 2.0, 50–51

BSD, 49

GNU's General Public License (GPL), 50

LGPL, 50

MIT, 49

New BSD, 49

list-modules **command, deployer,**
12, 108, 442list-targets **command, deployer,**
108, 442

Little-G server

- Jetty and, 6
- Tomcat and, 6
- `<local>` **element, 252**
- local references, EAR modules, 245–246**
- `<local-home>` **element, 252**
- `local-transaction` **item Resource Adapter plan, 285**
- lock down, 388–389**
- `login` **command, deployer, 107, 441**
- login domains, description, 340–341**
- login modules, JAAS, configuration, 346–352**
- `<login-domain-principal>` **element, 380**
- `<login-module>` **element, 365–367**
- `LoginModuleGBean`, **352–353**
- `<login-module-ref>` **element, 364–365**
- LoginModules**
 - `CertificateChainLoginModule`, 360
 - `CertificatePropertiesFileLoginModule`, 360
 - `FileAuditLoginModule`, 360
 - `GeronimoPasswordCredentialLoginModule`, 360
 - `LDAPLoginModule`, 357
 - `LoginModuleGBean` and, 352
 - `PropertiesFileLoginModule`, 356
 - `RepeatedFailureLockoutLoginModule`, 362
 - `SQLLoginModule`, 356
 - `xml-reference login-config` and, 363–367
- `log4j` **directory, 85**

M

- `MailSession` **GBean, 266**
- `ManagerGBean`, **227**
- Mandatory EJB attribute, 264**
- mapping external references, 246–247, 258**
- mapping files**
 - JAX-RPC, 321
 - WSDL, 321
- mapping internal references, EJBs, 258**
- `match-all` **item Resource Adapter plan, 285**

- `match-one` **item Resource Adapter plan, 285**
- Maven deployment plug-in, 111–115**
- `max-size` **item Resource Adapter plan, 286**
- MDBs (message driven beans)**
 - elements
 - `<activation-config>`, 254
 - `<ejb-class>`, 253
 - `<ejb-name>`, 253
 - `<message-destination-link>`, 254
 - `<message-destination-type>`, 254
 - `<messaging-type>`, 254
 - `<security-identity>`, 254
 - `<transaction-type>`, 254
 - introduction, 59
- MEJB (Management EJB), 121–123**
- MEP (Message Exchange Pattern), 307**
- `message-destination-name` **item Resource Adapter plan, 286**
- META-INF directory, configuration files, 87**
- `min-size` **item Resource Adapter plan, 286**
- `<module>` **element, 430**
- `moduleId` **item Resource Adapter plan, 284**
- modules**
 - assemblies and, 78–79
 - CAR, 87–89
 - configuration, `config.xml`, 30–31
 - deployed
 - introduction, 29
 - managing, 166–168
 - storing associated with configuration, 89–90
 - deploying, to server instance, 100–101
 - deployment plan, 77
 - description, 29
 - GBeans and, 77–78
 - lifecycle, states, 29
- mx4j directory, 86**

N

- `<named-username-password-credential>` **element, 380**
- namespaces in descriptors, Web containers and, 193–199**

<naming:cmp-connection-factory>

element, 427

<naming:ejb-ref> **element, 432**

<naming:gbean-ref> **element, 431**

<naming:message-destination> **element, 425, 427, 432**

<naming:resource-env-ref> **element, 432**

<naming:resourceref> **element, 432**

<naming:service-ref> **element, 432**

<naming:web-container> **element, 425**

Never EJB attribute, 264

non-overridable-classes **item Resource Adapter plan, 284**

no-pool **item Resource Adapter plan, 285**

NoSecurity **CSS GBean, 332**

NoSecurityIdentityTokenCert **CSS GBean, 332**

NoSecurityIdentityTokenPrincipal **CSS GBean, 332**

no-transaction **item Resource Adapter plan, 285**

NotSupported **EJB attribute, 264**

O

Object Request Broker (ORB), CORBA, 326–327, 335

offline installation, deployer, 103–104

-offline **option, command-line deployer, 438**

--offline **option, deployer, 106**

OMG (Object Management Group), 306

open source software

benefits, 47–48

licenses

Apache License 2.0, 50–51

BSD license, 49

GNU General Public License (GPL), 50

LGPL, 50

MIT license, 49

New BSD license, 49

overview, 48

OpenEJB, Business tier and, 60

openejb directory, 86

openejb-jar.xml

cmp-connection-factory subelement, 256

db-syntax-factory subelement, 256

dependency subelement, 256

description, 424

ejb-ql-connection-factory subelement, 256

enforce-foreign-key-constraints subelement, 256

enterprise-beans subelement, 256

gbean subelement, 256

hidden-classes subelement, 256

import subelement, 256

message-destination subelement, 256

non-overridable-classes subelement, 256

relationships subelement, 256

security subelement, 256

top-level elements

<db-syntax-factory>, 427

<ejb-ql-compiler-factory>, 427

<enforce-foreign-key-constraints>, 427

<enterprise-beans>, 427

<naming:cmp-connection-factory>, 427

<naming:message-destination>, 427

<relationships>, 427

<security:security>, 427

<sys:environment>, 426

<sys:gbean>, 427

ORB (Object Request Broker), CORBA, 326–327, 335

org/apache/derby **directory, 86**

org/apache/geronimo/specs **directory, 86**

org/apache/Pluto **directory, 86**

outbound-resource-adapter **item Resource Adapter plan, 284**

P

`partition-by-connectionrequestinfo`
item Resource Adapter plan, 286

`partition-by-subject` **item Resource Adapter plan, 286**

`partitioned-pool` **item Resource Adapter plan, 285**

`-password` **option, command-line deployer, 438**

`--password` **option, deployer, 105**

`pg_ctl` **utility, 279**

plug-ins

- commands for, 108–109
- downloading, 168
- installing, 109–110
- searching, 109–110

`-port` **option, command-line deployer, 437**

`--port` **option, deployer, 105**

`portlet-api` **directory, 86**

portlets

- Application EARs, 22
- Database Manager, 173
- description, 21
- Install New Applications, 22
- Web console, 148

ports, service listeners, 34–35

POSTGRES project, 277

postgres user, 279

PostgreSQL

- architecture, 278–279
- clustered
 - configuration, 299–300
 - deployed, 303
- introduction, 277
- Sequoia and, 297–303
- starting, 279–280

postgresql-plan.xml, output, 290

`<principal>` **element, 381**

progeron.ear file

- archive file bundling, 18
- deployment, 17
- introduction, 16

progeron-ejbs.jar, 19

progeron.war, 19

programmatic security, 339

project home page, 2

PropertiesFileLoginModule, 356

protected resources, 339

R

RAR files

- deployment descriptors, 25–26
- JCA, 280–281

`RealmGBean`, **227**

`<realm-name>` **element, 432**

`<realm-principal>` **element, 381**

realms, Tomcat, 232–235

`redeploy` **command, deployer, 107, 440**

`<relationships>` **element, 427**

releases

- 1.0, 4
- 1.1, 4
- introduction, 3
- M3, 5
- M4 (Milestone 4), 5
- M5 (Milestone 5), 5

`<remote>` **element, 252**

`RepeatedFailureLockoutLoginModule`, **362**

repository

- artifacts, installing, 159–161
- assemblies and, 79
- as configuration store, 86–87
- description, 75
- directories, top-level, 85

repository directory

- `activeio` subdirectory, 85
- `activemq` subdirectory, 85
- `antlr` subdirectory, 85
- artifacts, 83–84
- `asm` subdirectory, 85
- `axis` subdirectory, 85
- `cglib` subdirectory, 85
- `common-beanutils` subdirectory, 85

common-cli subdirectory, 85
 common-digester subdirectory, 85
 commons-collections subdirectory, 85
 commons-el subdirectory, 85
 commons-logging subdirectory, 85
 commons-modeler subdirectory, 85
 concurrent subdirectory, 85
 coordinates, 83–84
 geronimo subdirectory, 85
 geronimo-spec subdirectory, 85
 howl subdirectory, 85
 jdom subdirectory, 85
 juddi subdirectory, 85
 junit subdirectory, 85
 log4j subdirectory, 85
 mx4j subdirectory, 86
 openejb subdirectory, 86
 org/apache/derby subdirectory, 86
 org/apache/geronimo/specs
 subdirectory, 86
 org/apache/Pluto subdirectory, 86
 portlet-api subdirectory, 86
 scout subdirectory, 86
 stax subdirectory, 86
 tomcat subdirectory, 86
 wsd14j subdirectory, 86
 xerces subdirectory, 86
 xmlbeans subdirectory, 86
 xpp3 subdirectory, 86
 xstream subdirectory, 86
**Request Response Message Exchange Pattern
 (MEP), 307–308**
Required EJB attribute, 264
RequiresNew EJB attribute, 264
resource adapter plan contents, 286
resource adapter, TranQL, 287
 <resource> **element, 432**
 <resourceadapter> **element, 428**
 resourceadapter **item Resource Adapter
 plan, 284**
 resourceadapter-instance **item
 Resource Adapter plan, 284**

resourceadapter-name **item Resource
 Adapter plan, 284**
resources, deploying JDBC, 289–297
 <role> **element, 382**
 <role-mapping> **element, 382**
running state, modules, 29
run-time state information, deployer, 110–111

S

schema **directory, 90–93**
 scout **directory, 86**
scripts, startup.sh, 10
searches, plug-ins, 109–110
search-plugins command, deployer, 109, 443
security
 architecture
 authentication, 339
 authorization, 339–340
 login domains, 340–341
 security realms, 340–341
 configuration
 console realm, 170
 keystore, 171–172
 security realm, 170–171
 declaration, 378–388
 declarative, 339
 descriptor
 <default-principal> **element, 378–379**
 <description> **element, 379**
 <distinguished-name> **element, 379**
 <login-domain-principal>
 element, 380
 <named-username-password-
 credential> **element, 380**
 <principal> **element, 381**
 <realm-principal> **element, 381**
 <role> **element, 382**
 <role-mapping> **element, 382**
 <security> **element, 382**
 policies, 339
 principals, 339

security (continued)

- programmatic, 339
- protected resources, 339
- subsystem importance, 338
- `<security>` **element, 383**
- security realms, 340**
 - configuration, 367–372
 - description, 340
 - `GenericSecurityRealm` GBean, 350
 - xml-references, 363–364
- `<security-realm-name>` **element, 425**
- `<security:security>` **element, 425, 427, 430**
- `SecurityService` **GBean, overriding, 386–388**
- SEI (Service Endpoint Interface), 309**
- `select-one-assume-match` **item Resource Adapter plan, 285**
- Sequoia**
 - configuration, 300–303
 - PostgreSQL and, 297–303
- server.jar, 81**
- `ServerRealmConfigurationEntry` **GBean, 348–349**
- service endpoints, mapping session beans to, 322**
- service listeners**
 - IP address, 34–35
 - port address, 34–35
- `<service-endpoint>` **element, 252**
- `<service-ref>` **element**
 - `<jaxrpc-mapping>` subelement, 316
 - `<service-interface>` subelement, 316
 - `<service-ref-name>` subelement, 316
 - `<wsdl-file>` subelement, 316
- services, ports, 11**
- servlets, Web tier and, 56–57**
- session beans**
 - deploying, 248–254
 - elements
 - common in entity beans, 251–252
 - `<security-identity>`, 252
 - `<security-role-ref>`, 252

- `<session-type>`, 252
- `<transaction-type>`, 252
- introduction, 58
- mapping to service endpoints, 322
- overview, 241
- stateless, as Web services, 320–324
- session EJBs**
 - as CORBA components
 - CORBA 2.3 security, 329
 - CORBA client support, 332–334
 - ORB parameters, `config.xml` and, 335
 - parent modules, 334
 - security configuration, 330–332
 - deploying, example, 247–265
- `shutdown.jar`, **81**
- `single-pool` **item Resource Adapter plan, 285**
- SOAP, Web services, 307–308**
- software components**
 - building phase, 26
 - configuration phase, 26
 - deployment descriptors, standard, 24–25
 - distribution phase, 27
 - EJB, 24
 - JCA connectors, 24
 - JSP, 24
 - lifecycle, 28
 - loading, 26
 - MDB, 24
 - modules
 - failed state, 29
 - overview, 26
 - running state, 29
 - starting state, 29
 - servlets, 24
 - starting, 26
 - stopping, 26
- source code distributions, 5**
- Spring Framework, 77**
 - `SQLLoginModule`, **356**
 - `SSLClientCert` **CSS GBean, 332**
 - `SSLClientCert` **TSS GBean, 330**

SSLClientCertIdentityToken **TSS GBean, 330**

SSLClientPassword **CSS GBean, 332**

SSLClientPassword **TSS GBean, 330**

SSLIdentityToken **TSS GBean, 330**

SSLIdentityTokenCert **CSS GBean, 332**

SSLIdentityTokenPrincipal **CSS GBean, 332**

start **command, deployer, 106, 441**

starting state, modules, 29

startup **command, 10**

startup.sh script, 10

stateless session EJBs as Web services, 320–324

stax **directory, 86**

STOMP (Streamlining Text Oriented Messaging Protocol), 392

stop **command, deployer, 107, 441**

stubs, 309

Subversion, 3

Supports EJB attribute, 264

`<sys:client-environment>` **element, 431**

`<sys:environment>` **element, 425, 428, 430**

`-syserr` **option, command-line deployer, 438**

`--syserr` **option, deployer, 105**

`<sys:gbean>` **element, 425, 427, 428, 430, 432**

`<sys:server-environment>` **element, 431**

T

Target Security Service (TSS), 329

thread-caching **item Resource Adapter plan, 285**

tiers

- Business
 - ActiveMQ, 60–61
 - EJBs, deploying, 60
 - OpenEJB, 60
- Business tier
 - components deployable, 58–59
 - deployable module, 59
 - overview, 54
 - client support, 54

EIS

- ActiveMQ, 62–63
- Derby, 63
- introduction, 54
- JavaMail, 63
- interoperability, 54

Web

- components deployable, 56–57
- containers, 56
- Jetty, 58
- JSP, 56–57
- lightweight server solutions, 56
- overview, 54–57
- presentation layer components, 55
- servlets, 56–57
- Tomcat, 57–58

Web services

- AXIS, 64
- integration, 64–66
- introduction, 54
- overview, 63–64
- UDDI support, 66

Tomcat

- architecture, 210–211
- configuration
 - architecture and, 210–211
 - connectors, 229
 - context level, 235–238
 - files, Geronimo equivalents, 211
 - introduction, 209
 - SSL connector, 230
 - virtual hosts, 230
- connectors, configuration, 229
- context level configuration, 235–238

GBeans

- ConnectorGBean, 218
- EngineGbean, 223
- HostGBean, 225
- HttpsConnectorBean, 220
- ManagerGBean, 227
- RealmGBean, 227
- TomcatContainer, 218
- ValveGBean, 228

Tomcat (continued)

- geronimo-web.xml, 235–238
- introduction, 5–6
- Little-G and, 6
- plan.xml, 212–216
- realms, 232–235
- running, 208–209
- server.xml, 212
- valves, 231–232
- verification, 208–209
- Web tier, 57–58
- tomcat **directory, 86**
- TomcatContainer
 - Connector objects, 210
 - introduction, 218
 - Realm objects, 211
 - Valve objects, 211
- TomcatWebConnector **GBean component, 34**
- tranql **directory, 86**
- transaction-caching **item Resource Adapter plan, 285**
- transaction-log **item Resource Adapter plan, 285**
- transactions**
 - attributes
 - Mandatory, 264
 - Never, 264
 - NotSupported, 264
 - Required, 264
 - RequiresNew, 264
 - Supports, 264
 - boundaries, 263
 - configuration, 262–265
- TSS GBeans**
 - IdentityTokenNoSecurity, 330
 - SSLClientCert, 330
 - SSLClientCertIdentityToken, 330
 - SSLClientPassword, 330
 - SSLIdentityToken, 330
- TSS (Target Security Service), 329**

U

- UDDI (Universal Description Discovery and Integration) server**
 - jUDDI, 66
 - Tomcat, 21
- undeploy **command, deployer, 107, 440**
- Uninstall **command, 22**
- upgrade.jar, 81**
- uri **option, command-line deployer, 437**
- uri **option, deployer, 105**
- user **option, command-line deployer, 438**
- user **option, deployer, 105**

V

- ValveGBean, 228**
- valves, Tomcat, 231–232**
- var **directory**
 - activemq directory, 93
 - catalina directory, 93
 - config directory, 93
 - derby directory, 93
 - log directory, 93
 - security directory, 94
 - shared directory, 94
 - tmp directory, 94
 - txlog directory, 94
- verbose **option, command-line deployer, 438**
- verbose **option, deployer, 106**
- verification, installation, 11–12**

W

- WAR (Web application archive) files**
 - deployment descriptors, 24–26
 - Web services
 - cross-server compatible, 316–317
 - deploying on Geronimo, 311–320
 - Web tier container, 57

Web applications

- deployment
 - Geronimo-specific plan, 190–191
 - overview, 191–193
- starting, 191–193
- stopping, 191–193
- undeploying, 191–193

Web console

- adding users, 149–150
- application deployment and, 20–23, 164–166
- applications, exposing via Web server, 158–159
- architecture, 148
- attributes, configuration, 36–37
- connectors, Web containers, 187–189
- databases, pools, installing, 162–163
- GUI, deployment and, 444–445
- JDBC resource deployment, 291–296
- JMS resource groups, 163–164
- JVM, viewing properties, 151
- log files
 - searching, 151–153
 - viewing, 151–153
- logging on, 148–149
- login page, 20
- modules, deployed, managing, 166–168
- properties files, 150
- repository, artifacts, installing, 159–161
- server connectors, configuration, 154–156
- server shutdown, 153
- system information, 150
- thread pools, monitoring, 157

Web containers

- applications, configuration, 190–199
- classes, hiding, 197–199
- configuration, default, 185–187
- connectors
 - config.xml, 189–190
 - Web console and, 187–189
- descriptors, namespaces, 193–199

- Jetty
 - config.xml, 185
 - Tomcat common elements, 196
- Jetty and Tomcat at same time, 184–190
- Tomcat
 - config.xml, 184–185
 - Jetty common elements, 196

Web Service Description Language (WSDL), 307, 321**Web services**

- AXIS, 64
- context root, 317
- CORBA comparison, 324–325
- deploying, 318–319
- deployment context, 323
- deployment descriptor, webservices.xml, 312–315
- EJB-based implementation, 321–322
- Geronimo and, 310–311
- HTTP and, 306–307
- integration, 64–66
- interfaces, 308
- JAX-RPC, 307–308
- Request Response MEP, 308
- SEI, 309
- SOAP, 307–308
- stateless session EJB as, 320–324
- UDDI support, 66
- WAR files
 - cross-server compatible, 316–317
 - deploying on Geronimo, 311–320
- XML, 307–308

Web sites, Apache Software Foundation, 1**Web tier**

- components deployable, 56–57
- Jetty, 58
- Tomcat, 57–58

webservices.xml deployment descriptor

- <handler> element, 315
- introduction, 312
- <port-component> element, 314

webservices.xml deployment descriptor (continued)

<service-impl-bean> element, 314

<webservices> element, 313

Web-tier applications

deploying

reference namespaces, 424

top-level elements, 424–425

EJBs, 243–244

Web-tier modules, external references, 244

web.xml deployment descriptor, 315–316

workmanager item Resource Adapter plan, 284

WSDL (Web Service Description Language), 307, 321

wsdl4j **directory, 86**

X

xa-transaction **item Resource Adapter
plan, 285**

xerces **directory, 86**

XML

schema, J2EE deployment descriptors, 177

Web services, 307–308

xmlbeans **directory, 86**

xml-reference **login configuration,
LoginModules, 363–367**

xpp3 **directory, 86**

xstream **directory, 86**

