Setup JBoss with MySQL Database
by Michael Maretzke

Introduction

This HowTo explains the configuration steps to combine JBoss Application Server with a MySQL database.

Installation

Major software products involved:

- JBoss Application Server Version 3.0.0 (`jboss-3.0.0_tomcat-4.0.3.zip`)
- Apache Tomcat Version 4.0.3 (`jboss-3.0.0_tomcat-4.0.3.zip`)
- MySQL database Version 3.23.51

Installation of JBoss / Tomcat

- Unzip `jboss-3.0.0_tomcat-4.0.3.zip` to a temp directory.
- Copy the content of directory `jboss-3.0.0_tomcat-4.0.3` to `d:\jboss-3.0.0_tomcat-4.0.3`
- Edit the files `d:\jboss-3.0.0_tomcat-4.0.3serverdefaultconfjboss-service.xml` and `d:\jboss-3.0.0_tomcat-4.0.3serverdefaultconfjboss-service.xml`

Installation of MySQL

- Double Click `mysql-3.23.51-win.zip`
- Start the included installer
- Select the installation directory to `d:\mysql`
- Start `d:\mysqlbinwinmysqladmin.exe`
- Enter username `admin` for administrator and password `admin` for administrator of MySQL database
- Shutdown `winmysqladmin.exe` and restart the tool again (now the database is operational)
- Start mysql console using `mysql -u admin -p` - type `admin` as password
- Create a user for development using
  `GRANT ALL PRIVILEGES ON test.* TO developer@localhost IDENTIFIED BY 'mysql';`
- Quit console and re-login using `mysql -u developer -p test` with `mysql` as password
- Try some SQL statements

Configuration of MySQL for usage within JBoss environment

- Run `winmysqladmin.exe` stored in `bin` directory of mysql installation

There's a need to switch from the default `mysqld` to `mysqld-max-nt` - by default `mysqld` is used which supports only ISAM and does NOT support transaction. To use `mysqld-max-nt` with InnoDB or BDB enabled (supporting transactions) `my.ini` should be configured as follows:

```
#This File was made using the WinMySQLAdmin 1.4 Tool
#06.08.2002 16:59:32

#Uncomment or Add only the keys that you know how works.
#Read the MySQL Manual for instructions

[mysqld]
basedir=D:/mysql
#bind-address=195.30.48.4
```

```
datadir=D:/mysql/data
#language=D:/mysql/share/your language directory
#slow query log#=
#tmpdir#=
#port=3306
#set-variable=key_buffer=16M

# ADDITIONS START here made by Michael Maretzke, 20020806
innodb_data_home_dir = d:mysqlibdata
innodb_data_file_path = ibdata1:500M;ibdata2:500M
set-variable = innodb_buffer_pool_size=70M
set-variable = innodb_additional_mem_pool_size=10M
innodb_log_group_home_dir = d:mysqliblogs
innodb_log_arch_dir = d:mysqliblogs
innodb_log_archive = 0
set-variable = innodb_log_files_in_group=3
set-variable = innodb_log_file_size=10M
set-variable = innodb_log_buffer_size=8M
innodb_flush_log_at_trx_commit=1
set-variable = innodb_file_io_threads=4
set-variable = innodb_lock_wait_timeout=50
# ADDITIONS END here made by Michael Maretzke, 20020806

[WinMySQLadmin]
Server=D:/mysql/bin/mysqld-max-nt.exe
user=admin
password=admin
```

Listing 1my.ini – MySQL configuration file

- Start the NT service - MySQL should start properly

Integration of JBoss with MySQL

- Download jdbc driver for MySQL (`mm.mysql-2.0.14-bin.jar`)
- Copy `mm.mysql-2.0.14-bin.jar` file to `<jboss-installation-directory>/lib`
- Register the mysql database within JBoss by copying file `mysql-service.xml` to directory `<jboss-installation-directory>/server/default/deploy` and Customize the file as follows:

```xml
<?xml version="1.0" encoding="UTF-8"?>

<!-- ==================================================================== -->
<!-- -->
<!-- JBoss Server Configuration -->
<!-- -->
<!-- ==================================================================== -->

<server>

<!-- ==================================================================== -->
<!-- New ConnectionManager setup for mysql using 2.0.11 driver -->
<!-- Build jmx-api (build/build.sh all) and view for config documentation -->
<!-- ==================================================================== -->

<mbean code="org.jboss.resource.connectionmanager.LocalTxConnectionManager"
name="jboss.jca:service=LocalTxCM,name=MySqlDS">


<!-- Include a login module configuration named MySqlDbRealm.
Update your login-conf.xml, here is an example for a
ConfiguredIdentityLoginModule:

<application-policy name = "MySqlDbRealm">
<authentication>
<login-module code = "org.jboss.resource.security.ConfiguredIdentityLoginModule" flag =
"required">
<module-option name = "principal">yourprincipal</module-option>
<module-option name = "userName">yourusername</module-option>
<module-option name = "password">yourpassword</module-option>
<module-option name =
"managedConnectionFactoryName">jboss.jca:service=LocalTxCM,name=MySqlDS</module-option>
</login-module>
</authentication>
</application-policy>

NOTE: the application-policy name attribute must match SecurityDomainJndiName, and the
```

```
module-option name = "managedConnectionFactoryName"
must match the object name of the ConnectionManager you are configuring here.
-->
<!--uncomment out this line if you are using the MySqlDbRealm above
-->
<attribute name="SecurityDomainJndiName">MySqlDbRealm</attribute>


<depends optional-attribute-name="ManagedConnectionFactoryName">
<!--embedded mbean-->
<mbean code="org.jboss.resource.connectionmanager.RARDeployment"
name="jboss.jca:service=LocalTxDS,name=MySqlDS">

<attribute name="JndiName">MySqlDS</attribute>

<attribute name="ManagedConnectionFactoryProperties">
<properties>
<config-property name="ConnectionURL"
type="java.lang.String">jdbc:mysql://enterprise.comlab.sigillium.de:3306/agora</config-
property>
<config-property name="DriverClass" type="java.lang.String">org.gjt.mm.mysql.Driver</config-
property>
<!--set these only if you want only default logins, not through JAAS -->
<config-property name="UserName" type="java.lang.String"></config-property>
<config-property name="Password" type="java.lang.String"></config-property>
</properties>

</attribute>

<!--Below here are advanced properties -->
<!--hack-->
<depends optional-attribute-name="OldRarDeployment">jboss.jca:service=RARDeployment,name=JBoss
LocalTransaction JDBC Wrapper</depends>

</mbean>
</depends>

<depends optional-attribute-name="ManagedConnectionPool">
<!--embedded mbean-->
<mbean code="org.jboss.resource.connectionmanager.JBossManagedConnectionPool"
name="jboss.jca:service=LocalTxPool,name=MySqlDS">

<attribute name="MinSize">0</attribute>
<attribute name="MaxSize">50</attribute>
<attribute name="BlockingTimeoutMillis">5000</attribute>
<attribute name="IdleTimeoutMinutes">15</attribute>
<!--criteria indicates if Subject (from security domain) or app supplied
parameters (such as from getConnection(user, pw)) are used to distinguish
connections in the pool. Choices are
ByContainerAndApplication (use both),
ByContainer (use Subject),
ByApplication (use app supplied params only),
ByNothing (all connections are equivalent, usually if adapter supports
reauthentication)-->
<attribute name="Criteria">ByContainer</attribute>
</mbean>

</depends>
<depends optional-attribute-
name="CachedConnectionManager">jboss.jca:service=CachedConnectionManager</depends>

<depends optional-attribute-
name="JaasSecurityManagerService">jboss.security:name=JaasSecurityManager</depends>

<attribute name="TransactionManager">java:/TransactionManager</attribute>
<!--make the rar deploy! hack till better deployment-->
<depends>jboss.jca:service=RARDeployer</depends>

</mbean>


</server>
```

Listing 2 JBoss configuration file mysql-service.xml

- Customize `login-config.xml` stored in `<jboss-installation-directory>/server/default/conf`:

```
...
<application-policy name = "MySqlDbRealm">
<authentication>
<login-module code = "org.jboss.resource.security.ConfiguredIdentityLoginModule"
flag = "required">
<module-option name = "principal">developer</module-option>
<module-option name = "userName">developer</module-option>
<module-option name = "password">mysql</module-option>
<module-option name =
"managedConnectionFactoryName">jboss.jca:service=LocalTxCM,name=MySqlDB</module-option>
</login-module>
</authentication>
</application-policy>
...
```

Listing 3 JBoss configuration file login-config.xml

- Start JBoss to verify configuration by correct startup