Documentation for JBPM Console 1.x

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JBPM Console 1.x

In OpenKM v7.1 the workflow engine is deployed as an independent application to ensure security and stability.

This application contains the jBPM workflow engine which was previously embedded in OpenKM v6.4

Installation

If the application is not already available in your installation, you can download it from https://download.openkm.com/ and follow the steps described at Installation.

JBPM Console 1.x compatibility

jBPM Console	OpenKM	SDK	Status
v1.21	v7.1.45	v3.34	Active
v1.20	v7.1.41	v3.32	Deprecated
v1.19	v7.1.37 to v7.1.40	v3.27	Deprecated
v1.18	v7.1.34 to v7.1.36	v3.24	Deprecated
v1.17	v7.1.33	v3.23	Deprecated
v1.16	v7.1.32	v3.22	Deprecated
v1.15	v7.1.30 to v.7.1.31	v3.21	Deprecated
v1.14	v7.1.29	v3.20	Deprecated
v1.13	v7.1.28	v3.19	Deprecated
v1.12	v7.1.27	v3.18	Deprecated
v1.11	v7.1.26	v3.17	Deprecated
v1.10	v7.1.25	v3.16	Deprecated
v1.9	v7.1.23 to v7.1.24	v3.15	Deprecated
v1.8	v7.1.22	v3.14	Deprecated

v1.7	v7.1.21	v3.13	Deprecated
v1.6	v7.1.20	v3.12	Deprecated
v1.5	v7.1.19	v3.11	Deprecated
v1.4	v7.1.18	v3.10	Deprecated
v1.3	v7.1.16 to v7.1.17	v3.9	Deprecated
v1.2	v7.1.14 to v7.1.15	v3.8	Deprecated

How to deploy a workflow

In order to deploy a new workflow, you have to point your browser to http://your-site.tdl/jbpm-console and go to "Admin". The default user and password is **admin** / **admin**. Once logged, you should see a list of deployed workflows. And also can deploy a new one using the form.

Keep on mind that this new workflow won't be available in OpenKM until you do a couple of tasks:

Register the workflow in the desired tenant

First of all, you need to register the workflow in the desired tenant. To do this, switch to the tenant and make use of the utility available at **Administration > Utilities** called **Workflow tenant**.

Make the workflow available in the user profile

Go to **Administration > Profiles** and choose the workflow to be available to the users who use the profile.

Installation

Configure JBPM Console

Steps to install and configure the workflow engine in OpenKM v7.1:

- Stop Tomcat
- The workflow engine is available at OpenKM download center (jBPM Console)
- Place the **jbpm-console.war** file into **$TOMCAT_HOME/webapps**
- Create the database:

```
CREATE DATABASE jbpm_console DEFAULT CHARACTER SET utf8 DEFAULT COLLATE utf8_bin;
CREATE USER 'jbpm_console'@'%' IDENTIFIED BY 'choose-any-pass';
GRANT ALL ON jbpm_console.* TO 'jbpm_console'@'%' WITH GRANT OPTION;
```

- Create the configuration file **$TOMCAT_HOME/jbpm-console.properties**

```
# Database
hibernate.connection.driver=com.mysql.cj.jdbc.Driver
hibernate.connection.url=jdbc:mysql://localhost:3306/jbpm_console?autoReconnect=true&
hibernate.connection.username=jbpm_console
hibernate.connection.password=choose-any-pass
hibernate.dialect=org.hibernate.dialect.MySQL5InnoDBDialect
hibernate.hbm2ddl=create

# REST
openkm.rest.url=http://localhost:8080/openkm
openkm.rest.user=okmAdmin
openkm.rest.password=the-password
```

- The **openkm.rest** configuration property family is also important because jBPM Console will use this user to interact with you OpenKM instance. So, configure an user with enought permissions. This user should already exists in OpenKM.

- Start Tomcat
- Log into OpenKM and go to Administration > Config
- Set the **workflow.adapter** configuration property to **com.openkm.workflow.adapter.JbpmRemoteWorkflowAdapter**
- By default the jBPM Console application will be available at http://localhost:8080/jbpm-console/. The Admin section is restricted. You can change the workflow url with the configuration parameter named **workflow.adapter.url**.
- By default the user and password are set to "admin" and "admin". This user and password can be changed (and it's recommended). To change it, please go to http://localhost:8080/jbpm-console/admin/user and edit the corresponding user.

Keep on mind that you need to change the **workflow.adapter.login** and **workflow.adapter.password** configuration properties on the OpenKM side.

- To deploy a workflow, go to http://localhost:8080/jbpm-console/admin/workflow
- In this page, you can also access to previously deployed workflows, process instances and so on.

You can check the $TOMCAT_HOME/logs/jbpm-console.log in case of problems

Configure database

Configuring MySQL and MariaDB

MySQL:

- Create the database:

```
CREATE DATABASE jbpm_console DEFAULT CHARACTER SET utf8 DEFAULT COLLATE utf8_bin;
CREATE USER jbpm_console@localhost IDENTIFIED BY 'choose-any-pass';
GRANT ALL ON jbpm_console.* TO jbpm_console@localhost WITH GRANT OPTION;
```

- Create the configuration file **$TOMCAT_HOME/jbpm-console.properties**

In the latest MySQL versions, it seems you need to add **useSSL=false** to the connection URL.

```
# Database
hibernate.connection.driver=com.mysql.cj.jdbc.Driver
hibernate.connection.url=jdbc:mysql://localhost:3306/jbpm_console?autoReconnect=true&
hibernate.connection.username=jbpm_console
hibernate.connection.password=choose-any-pass
hibernate.dialect=org.hibernate.dialect.MySQL5InnoDBDialect
hibernate.hbm2ddl=create

# REST
openkm.rest.url=http://localhost:8080/openkm
openkm.rest.user=okmAdmin
openkm.rest.password=the-password
```

- Timezone (optional)

If you want to set your timezone in your JDBC connection according to your timezone configured in your system, first you can see the mappings for both MySQL and for MariaDB in this way:

```
SELECT * FROM mysql.time_zone_name
```

So, for example, you could configure your JDBC connection like this if your system timezone is for example UTC+1:

```
hibernate.connection.url=jdbc:mysql://localhost:3306/jbpm-console?
autoReconnect=true&useUnicode=true&characterEncoding=UTF8&serverTimezone=Europe/Madrid
```

Where **Europe/Madrid** is a valid value taken from table **time_zone_name.**

MariaDB:

- Create the database:

```
CREATE DATABASE jbpm_console DEFAULT CHARACTER SET utf8 DEFAULT COLLATE utf8_bin;
CREATE USER jbpm_console@localhost IDENTIFIED BY 'choose-any-pass';
GRANT ALL ON jbpm_console.* TO jbpm_console@localhost WITH GRANT OPTION;
```

- Create the configuration file **$TOMCAT_HOME/jbpm-console.properties**

MariaDB can use these driverClassName values:

- com.mysql.jdbc.Driver
- org.mariadb.jdbc.Driver

```
# Database
hibernate.connection.driver=org.mariadb.jdbc.Driver
hibernate.connection.url=jdbc:mariadb://localhost:3306/jbpm_console?autoReconnect=tru
hibernate.connection.username=jbpm_console
hibernate.connection.password=choose-any-pass
hibernate.dialect=org.hibernate.dialect.MySQL5InnoDBDialect
hibernate.hbm2ddl=create


# REST
openkm.rest.url=http://localhost:8080/openkm
openkm.rest.user=okmAdmin
openkm.rest.password=the-password
```

Configure the attributes values named:

- username
- password
- url (change to your hosts and port)

Configure PostgreSQL

- Create a database

```
DROP DATABASE IF EXISTS jbpm_console;
CREATE USER jbpm_console WITH PASSWORD 'choose-any-pass';
CREATE DATABASE jbpm_console WITH OWNER jbpm_console ENCODING 'UTF8';
```

Or from the command line

```
$ createuser --pwprompt jbpm_console
$ createdb --owner=jbpm_console --encoding=UTF8 jbpm_console
```

More info at:

- PostgreSQL 9.1 Documentation
- Guía Ubuntu: PostgreSQL

- Create the configuration file **$TOMCAT_HOME/jbpm-console.properties**

Choose the dialect what fits better with your database version:

- PostgreSQLDialect

```
# Database
hibernate.connection.driver=org.postgresql.Driver
hibernate.connection.url=jdbc:postgresql://localhost:5432/jbpm_console
hibernate.connection.username=jbpm_console
hibernate.connection.password=choose-any-pass
hibernate.dialect=org.hibernate.dialect.PostgreSQLDialect
hibernate.hbm2ddl=create
```

Configure the attributes values named:

- username
- password
- url (change to your hosts and port)

Configuring Oracle

- Database creation
- Create tablespace

```
create tablespace JBPM_CONSOLE_DATA datafile '/u01/app/oracle/oradata/XE/jbpm_console
```

- Create a database and user

```
create user JBPM_CONSOLE identified by choose-any-pass default tablespace JBPM_CONSOL
grant all privileges to JBPM_CONSOLE;
grant create any context, create cluster, create dimension, create indextype, create
   create procedure, create sequence, create session, create synonym, create table, c
```

- Create the configuration file **$TOMCAT_HOME/jbpm-console.properties**

Choose the dialect what fits better with your database version:

- Oracle8iDialect
- Oracle9iDialect
- Oracle10gDialect

```
# Database
hibernate.connection.driver=com.microsoft.sqlserver.jdbc.SQLServerDriver
hibernate.connection.url=sqlserver://localhost:1433;databaseName=okmdb
hibernate.connection.username=JBPM_CONSOLE
hibernate.connection.password=choose-any-pass
hibernate.dialect=org.hibernate.dialect.SQLServerDialect
hibernate.hbm2ddl=create
```

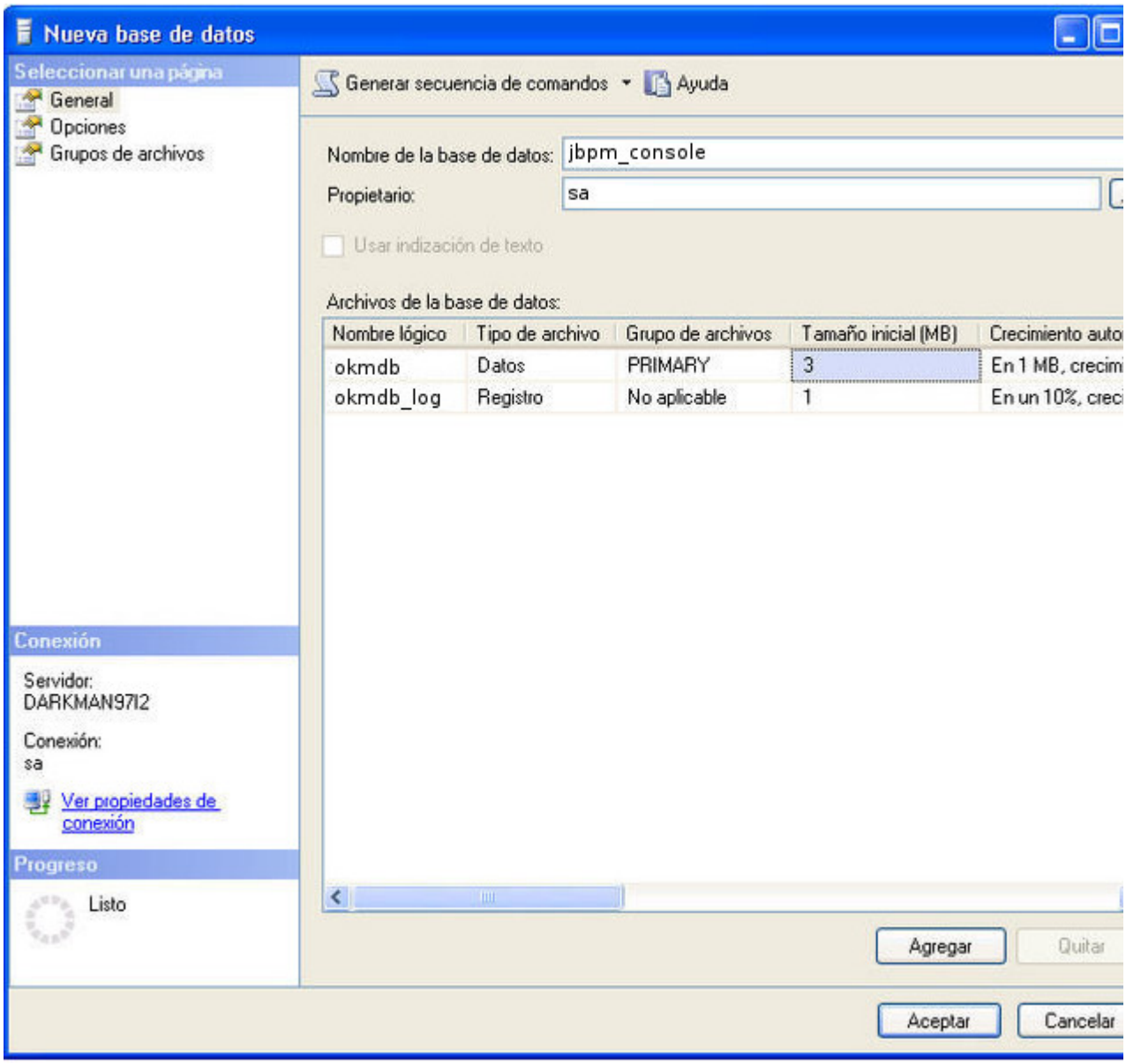
Configure the attributes values named:

- username
- password
- url (change to your hosts and port)

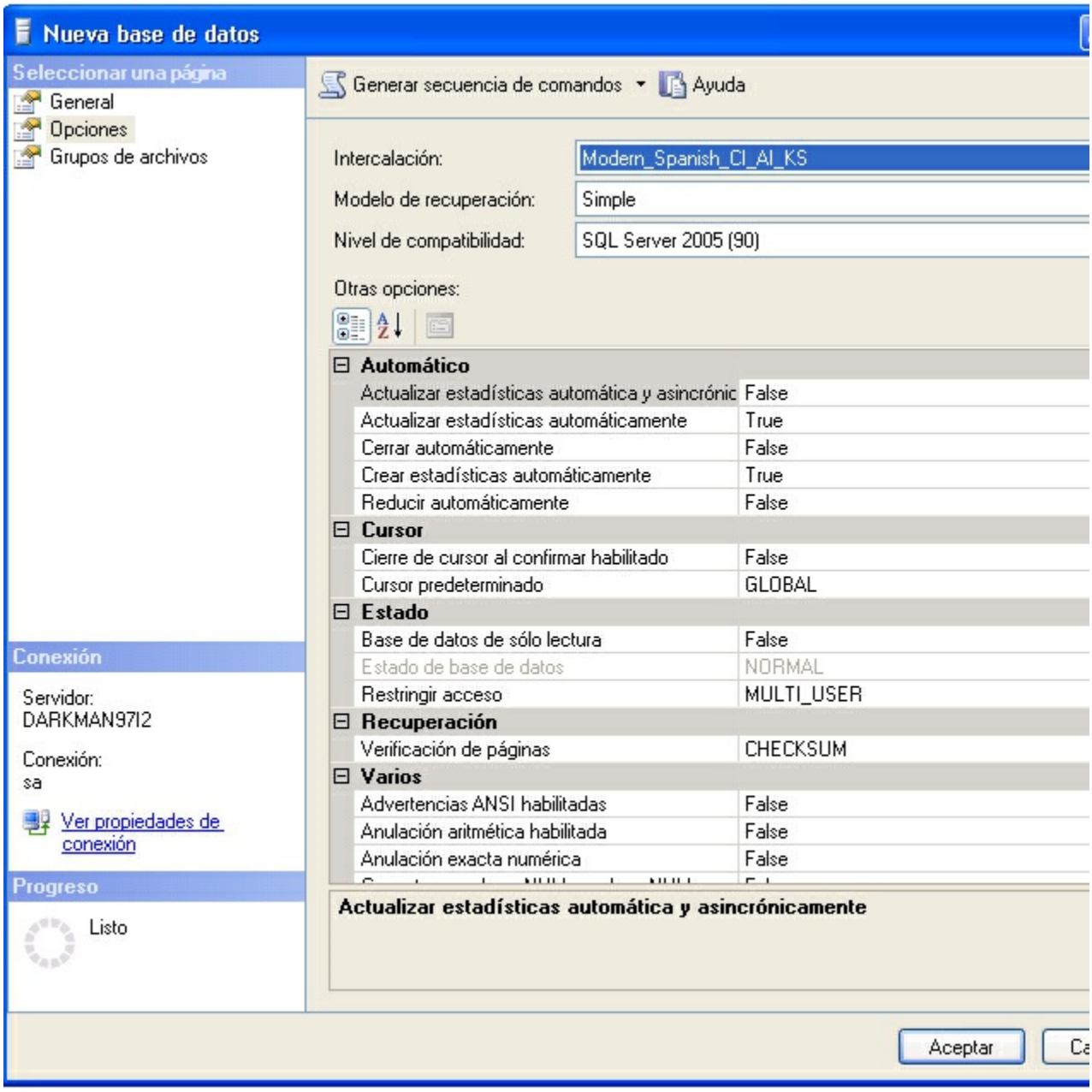
Configuring SQL Server

- Database creation

Start SQL Server Management Studio Express and create a database called **jbpm_console**.



Choose the appropriate database collate.



It is tested with **Modern_Spanish_CI_AI_KS**, where **CI indicate case-insensitive** collation and **AS indicate accent-sensitive** collation.

To ensure the correct functionality it should be selected **case-insensitive**

Make sure the database compatibility level matches the Hibernate database dialect configured at **jbpm-console.properties**. More info at Nivel de compatibilidad de ALTER DATABASE (Transact-SQL).

- Create the configuration file **$TOMCAT_HOME/jbpm-console.properties**

This configuration property should be set before the database creation. Once the database has been initialized

don't modify it because you can damage the installation.

If your application installation has been already configured with another database you can't switch to another database simply changing this property.

Choose the hibernate dialect what fits better with your current SQLServer database version:

- SQLServer2005Dialect
- SQLServer2008Dialect
- SQLServerDialect

```
# Database
hibernate.connection.driver=com.microsoft.sqlserver.jdbc.SQLServerDriver
hibernate.connection.url=jdbc:sqlserver://localhost:1433;databaseName=jbpm_console
hibernate.connection.username=jbpm_console
hibernate.connection.password=choose-any-pass
hibernate.dialect=org.hibernate.dialect.SQLServerDialect
hibernate.hbm2ddl=create
```

Configure the attributes values named:

- username
- password
- URL (change to your hosts and port)

Migration guide

Changelog

v1.21

- Release: 2024-04-03
- Updated internal SDK for Java to v3.34. It's compatible with OpenKM v7.1.45 or newer
- Fixed issue: performance problem when listing node workflows
- Improvement: process instances are now paginated.

v1.20

- Release: 2023-08-28
- Updated internal SDK for Java to v3.32. It's compatible with OpenKM v7.1.41 or newer
- Fixed issue: unable to deploy a workflow using the REST API
- Fixed issue: a afinished workflow should not be suspended
- Fixed issue: reminder mails were not sent
- Improvement: added more variables to mail notification template

v1.19

- Release: 2023-02-06
- Property "openkm.rest.password" can be now encripted
- Updated internal SDK for Java to v3.27. It's compatible with OpenKM v7.1.37 or newer

v1.18

- Release: 2022-09-27
- Update dependencies to avoid security issues
- Fixed issue with recovering from PostgreSQL database restart

v1.17

- Release: 2022-07-19
- Updated internal SDK for Java to v3.23. It's compatible with OpenKM v7.1.33 or newer

v1.16

- Release: 2022-05-16
- Added option to make a massive process definition task actor change
- Updated internal SDK for Java to v3.22. It's compatible with OpenKM v7.1.32 or newer

v1.15

- Release: 2022-02-01
- Show node name in process instances listing
- Updated internal SDK for Java to v3.21. It's compatible with OpenKM v7.1.30 or newer

v1.14

- Released 2021-12-17
- Updated internal SDK for Java to v3.20. It's compatible with OpenKM v7.1.29 or newer

v1.13

- Released 2021-10-08
- Updated internal SDK for Java to v3.19. It's compatible with OpenKM v7.1.28 or newer

v1.12

- Released 2021-09-22
- Updated internal SDK for Java to v3.18. It's compatible with OpenKM v7.1.27 or newer

v1.11

- Released 2021-08-30
- Updated internal SDK for Java to v3.17. It's compatible with OpenKM v7.1.26 or newer

v1.10

- Released 2021-08-03
- Updated internal SDK for Java to v3.16. It's compatible with OpenKM v7.1.25 or newer

v1.9

- Released 2021-06-09
- Updated internal SDK for Java to v3.15. It's compatible with OpenKM v7.1.23 or newer
- Make task notification mail subject & body configurable

v1.8

- Released 2021-05-03
- Updated internal SDK for Java to v3.14. It's compatible with OpenKM v7.1.22 or newer

v1.7

- Released 2021-04-06
- Rest error improvements
- Updated internal SDK for Java to v3.13. It's compatible with OpenKM v7.1.21 or newer

v1.6

- Released 2021-02-22
- Updated internal SDK for Java to v3.12. It's compatible with OpenKM v7.1.20 or newer

v1.5

- Released 2021-01-22
- Updated internal SDK for Java to v3.11. It's compatible with OpenKM v7.1.19 or newer
- Tasks are now paginated to manage huge workflows.

v1.4

- Released 2020-12-04
- Updated internal SDK for Java to v3.10. It's compatible with OpenKM v7.1.18 or newer
- Added read-only users which can't modify or delete process instances.

Migration from v1.20 to v1.21

- Download jBPM Console v1.21 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the **jbpm-console.war** archive
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.19 to v1.20

- Download jBPM Console v1.20 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the **jbpm-console.war** archive
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.18 to v1.19

- Download jBPM Console v1.19 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the **jbpm-console.war** archive
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.17 to v1.18

- Download jBPM Console v1.18 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the **jbpm-console.war** archive
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.16 to v1.17

- Download jBPM Console v1.17 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the **jbpm-console.war** archive
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.15 to v1.16

- Download jBPM Console v1.16 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the **jbpm-console.war** archive
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.14 to v1.15

- Download jBPM Console v1.15 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the **jbpm-console.war** archive
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.13 to v1.14

- Download jBPM Console v1.14 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the **jbpm-console.war** archive
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.12 to v1.13

- Download jBPM Console v1.13 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.11 to v1.12

- Download jBPM Console v1.12 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.10 to v1.11

- Download jBPM Console v1.11 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.9 to v1.10

- Download jBPM Console v1.10 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.8 to v1.9

- Download jBPM Console v1.9 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.7 to v1.8

- Download jBPM Console v1.8 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.6 to v1.7

- Download jBPM Console v1.7 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.5 to v1.6

- Download jBPM Console v1.6 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.4 to v1.5

- Download jBPM Console v1.5 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.3 to v1.4

- Download jBPM Console v1.4 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again

Migration from v1.2 to v1.3

- Download jBPM Console v1.3 from https://download.openkm.com/pro/tools
- Stop Tomcat and replace the WAR
- Edit the **$TOMCAT_HOME/jbpm-console.properties** file and set the **hibernate.hbm2ddl** configuration property to **update**:

```
hibernate.hbm2ddl=update
```

- Start Tomcat again
- Several new tables will be created:
  - JBPM_USER
  - JBPM_ROLE
  - JBPM_USER_ROLE
- In case these tables are empty, execute these SQL sentences:

```
-- Users
INSERT INTO JBPM_USER (USR_ID, USR_PASSWORD, USR_NAME, USR_EMAIL, USR_ACTIVE) VA

-- Roles
INSERT INTO JBPM_ROLE (ROL_ID, ROL_ACTIVE) VALUES ('ROLE_ADMIN', 'T');

-- User & Roles
INSERT INTO JBPM_USER_ROLE (UR_USER, UR_ROLE) VALUES ('admin', 'ROLE_ADMIN');
```

- Now you will be able to login using the user and password: admin / admin

Troubleshooting

Database connection issues

If you have problem with the database connection it's interesting to debug the database connection pool. This can be done adding these properties to the **jbpm-console.properties** file:

```
hibernate.c3p0.debugUnreturnedConnectionStackTraces=true
hibernate.c3p0.unreturnedConnectionTimeout=10
logging.level.com.mchange.v2=INFO
```

According to C3P0 documentation, **unreturnedConnectionTimeout** defines a limit (in seconds) to how long a connection may remain checked out. If set to a nozero value, unreturned, checked-out connections that exceed this limit will be summarily destroyed, and then replaced in the pool. Obviously, you must take care to set this parameter to a value large enough that all intended operations on checked out connections have time to complete. You can use this parameter to merely workaround unreliable client apps that fail to close() connections.

Much better than working-around is fixing. If, in addition to setting **unreturnedConnectionTimeout**, you set **debugUnreturnedConnectionStackTraces** to true, then a stack trace will be captured each time a connection is checked-out. Whenever an unreturned connection times out, that stack trace will be printed, revealing where a connection was checked out that was not checked in promptly. **debugUnreturnedConnectionStackTraces** is intended to be used only for debugging, as capturing a stack trace can slow down connection check-out."

These settings should not be used for production.

Too many follow-up requests error

If you see errors like this on the OpenKM side:

Too many follow-up requests: 21

Please, verify the user and password configured in these configuration properties:

- **workflow.adapter.login**
- **workflow.adapter.password**

And also take a look at **openkm.log** and **jbpm-console.log** files to get more information.

The request was rejected because the URL was not normalized

The most common cause is a slash at the end of the **workflow.adapter.url** OpenKM configuration property. To fix, remove the

final slash.

It should be something like "http://localhost:8080/jbpm-console" and not "http://localhost:8080/jbpm-console/".

An instance cannot be ended and suspended at the same time

This should never happend, but in certain circunstances some task can be in this illegal stated. To detect which process instance is this one, we need to execute this sentence:

```
select * from JBPM_PROCESSINSTANCE pi WHERE pi.ISSUSPENDED_ = 1 and pi.END_ is not nu
```

Once we got the process instance id, we can change the suspended flag:

```
update JBPM_PROCESSINSTANCE pi set pi.ISSUSPENDED_ = 0 where pi.ID_ = 540;
```

And now the problem is solved.