Configuring JDBC Object Store

By default, Fedora comes configured to write binary resources (i.e. files) to the file system and RDF resources (i.e. objects) to a database. For testing, a file-based objects database may be useful. However, for production installations, it is recommended to use a MySQL or PostgresSQL object store. Below are the steps to use MySQL or PostgreSQL.

MySQL

1. Install an instance of MySQL and create a database user account
2. Run Fedora with the following `JAVA_OPTS`:

```
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.modeshape.configuration=classpath:/config/jdbc-mysql/repository.json"
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.mysql.username=<username>"
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.mysql.password=<password>"
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.mysql.host=<default=localhost>"
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.mysql.port=<default=3306>"
```

Note, the `fcrepo` database must be manually created, but the tables will be automatically created.

PostgreSQL

1. Install PostgreSQL and create a database called `fcrepo` and a user account that can access it
2. Run Fedora with the following `JAVA_OPTS`:

```
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.modeshape.configuration=classpath:/config/jdbc-postgresql/repository.json"
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.postgresql.username=<username>"
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.postgresql.password=<password>"
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.postgresql.host=<default=localhost>"
JAVA_OPTS="${JAVA_OPTS} -Dfcrepo.postgresql.port=<default=5432>"
```

Note, the `fcrepo` database must be manually created, but the tables will be automatically created.

JNDI Configuration

For both of the configurations above, you may alternatively use JNDI to connect to the MySQL or PostgreSQL databases.

This was accomplished for MySQL with Tomcat 7.0.54 on RHEL 7.2 as follows: (Note: Fedora web app is deployed as 'fcrepo'. Database username and password masked.)

- **Define the JNDI resource**

  /usr/share/tomcat/conf/Catalina/locahost/fcrepo.xml

```
<Context path="/fcrepo">
  <Resource name="jdbc/ispn" auth="Container" type="javax.sql.DataSource"
      username="***********" password="*************" driverClassName="com.mysql.jdbc.Driver"
      url="jdbc:mysql://127.0.0.1:3306/ispn?createDatabaseIfNotExist=true"
      factory="org.apache.commons.dbcp.BasicDataSourceFactory" />
</Context>
```

- **Modify Infinispan configuration**

  In inifinispan.xml :

  - Comment out <jdbc:connection-pool /> element.
  - Uncomment <jdbc:data-source /> element and set it as follows (to match the JNDI resource defined above):

```
<jdbc:data-source jndi-url="java:comp/env/jdbc/ispn"/>
```

Modeshape 5.x

Databases tested with the experimental Modeshape 5.0 branch:

- MySQL 5.5.49
- PostgreSQL 9.4 - 9.5

Database Setup

PostgreSQL

To create a new database and user in PostgreSQL, assuming a username of `user1` and a password of `xyz`:

```
$ sudo -u postgres psql
> create database fcrepo;
> create user user1;
> alter user user1 password 'xyz';
> grant all privileges on database fcrepo to user1;
> \q
```