



Configuring a DB2 datasource

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This article shows you how to configure a DB2 datasource in Apache Geronimo.

In this scenario, you will create a connection pool for a DB2 database, to connect to that database you are required to define at least two driver jar files. They include the JDBC driver itself and the respective license files. Depending on your implementation you will need different license files.

The steps described in this article are valid for deploying any other datasource when you do not have the drivers installed on the server, require multiple driver files, or both.

This article provides two alternatives to deploy the connection pool: using the Geronimo Administration Console and using the command line option.

Adding DB2 drivers to the repository

To add the DB2 drivers and license to the Geronimo repository, you are required to place the files in a particular directory structure. You will normally have two or three files to add to the repository. These files are:

- **db2jcc.jar** - This is the actual DB2 Universal JDBC Driver jar file.
- **db2jcc_license_cu.jar** - This is the standard DB2 Universal JDBC driver license file that allows access to the DB2 Universal database for Linux, UNIX and Windows servers.
- **db2jcc_license_cisuz.jar** - This is the DB2 (DB2 ESE and DB2 Connect) JDBC Driver license for z/OS and iSeries that should be used in addition to the standard license for these servers.

These files are available in the `<sqllib_home>\java` directory. For additional information about the DB2 JDBC drivers and licenses, visit the DB2 Information Center available at the following URL:

<http://publib.boulder.ibm.com/infocenter/db2luw/v9/index.jsp?topic=/com.ibm.db2.udb.doc/ad/t0010264.htm>

To use these files in Geronimo, rename (copy and rename) the files according to the following table. In this case, you will not use **db2jcc_license_cisuz.jar** because it is for Z/OS and iSeries.

Original name	Renamed
db2jcc.jar	db2jcc-9.5.jar
db2jcc_license_cu.jar	db2jcc_license_cu-9.5.jar

This means that for this particular case, DB2 v9.5 is used.

At this point, you are ready to add those files to the Geronimo repository in two ways. You can either use any graphical or command line tool to copy the files and create the necessary directories, or use the Geronimo Administration Console and add the driver and licenses to the common libraries. See the following details.

Using command line

Create the following directory structures under the `<geronimo_home>\repository` directory and copy the appropriate files to the respective directories.

- `com/ibm/db2/db2jcc/9.5`
and copy the **db2jcc-9.5.jar** file into that directory.
- `com/ibm/db2/db2jcc_license_cu/9.5`
and copy the **db2jcc_license_cisuz-9.5.jar** file into that directory.

Using the Geronimo Administration Console

To use the administration console, Apache Geronimo must be running. Access the Geronimo Administration Console by pointing your browser to the following URL:

<http://localhost:8080/console>

1. Enter **system** as the user name and **manager** as the password and click **Login**.
2. Click **Services->Repository** portlet.
3. Click **Browse** and select the first file to install. In this case, you can install **db2jcc-9.5.jar** first.
4. A set of values will be proposed by default, set the **Group**: to **com.ibm.db2**, leave the rest by default and click **Install**.
5. Repeat the previous two steps for **db2jcc_license_cisuz-9.5.jar**.

With the drivers and license files installed, you can now create a new database connection pool.

Creating a database connection pool using the wizard from the Geronimo Administration Console

From the Geronimo Administration Console, select **Database Pools** and create a new pool by clicking **Using the Geronimo database pool wizard**.

1. Enter the pool name **DB2_ds** and database type **DB2(DataDirect)** in the database pool wizard and then click **Next**. See illustration in the following figure.

Database Pools

Create Database Pool -- Step 1: Select Name and Database

Name of Database Pool:

A name that is different than the name for any other database pools in the server (no spaces in the name please).

Database Type:

The type of database the pool will connect to.

2. Select `com.ibm.db2/db2jcc/9.5/jar` and `com.ibm.db2/db2jcc_license_cu/9.5/jar` for the **Driver JAR** from the list by pressing **Ctrl** on the keyboard. Then enter the remaining connection information as shown in the following figure. For this example, the default **db2admin** user name and password are used and a **SAMPLE** database is created via the DB2 Control Center. Set `localhost` as the **Server Name**.

Database Pools

Create Database Pool -- Step 2: Select Driver, JAR, Parameters

Pool Name:

A name that is different than the name for any other database pools in the server (no spaces in the name please).

Pool Type:

A resource adaptor that provides access to a DB2 database with XA transaction support. The following properties were taken from the DB2 JCC Driver Documentation located at: <http://publib.boulder.ibm.com/infocenter/db2luw/v8/index.jsp?topic=com.ibm.db2.udb.doc/ad/cjvcjcup.htm>

Basic Connection Properties

Driver JAR:

- asm/asm-commons/3.1.jar
- asm/asm/3.1.jar
- backport-util-concurrent/backport-util-concurrent/2.2.jar
- cglib/cglib-nodep/2.1.3.jar
- com.envoisolutions.sxc/sxc-jaxb/0.7.2.jar
- com.envoisolutions.sxc/sxc-runtime/0.7.2.jar
- com.ibm.db2/db2jcc/9.5.jar
- com.ibm.db2/db2jcc_license_cu/9.5.jar
- com.sun.xml.bind/jaxb-impl/2.1.7.jar
- com.sun.xml.bind/jaxb-xjc/2.1.7.jar

The JAR(s) required to make a connection to the database. Use CTRL-click or SHIFT-click to select multiple jars.

The JAR(s) should already be installed under GERONIMO/repository/ (or)

Database Name:

Specifies the name for the database server. This name is used as the database portion of the connection URL.

User Name:

The name of the userID used to connect to the remote database server.

Password:

Confirm Password:

Server Name:

ServerName is the name / IP address of the host which the DB2 driver needs to connect to. There is no default.

Port Number:

3. Click **Deploy**. You will have **DB2_ds** listed in the **Database Pools** portlet.

Database Pools [view]

This page lists all the available database pools.

For each pool listed, you can click the **usage** link to see examples of how to use the pool from your application.

Name	Deployed As	State	Actions
DB2_ds	Server-wide	running	edit usage
NoTxDataSource	Server-wide	running	edit usage
SystemDataSource	Server-wide	running	edit usage

Create a new database pool:

- [Using the Geronimo database pool wizard](#)
- [Import from JBoss 4](#)
- [Import from WebLogic 9.1](#)

Deploying a database connection pool using the command line

As an alternative to the wizard, you can create a deployment plan manually and deploy it by using the command line based deployer tool. To use this option, create a **db2-plan.xml** file and copy the content of the following example to the file.

db2-plan.xml deployment plan

```
<?xml version="1.0" encoding="UTF-8"?>
<connector xmlns="http://geronimo.apache.org/xml/ns/j2ee/connector-1.2">
  <dep:environment xmlns:dep="http://geronimo.apache.org/xml/ns/deployment-1.2">
    <dep:moduleId>
      <dep:groupId>console.dbpool</dep:groupId>
      <dep:artifactId>DB2_ds</dep:artifactId>
      <dep:version>1.0</dep:version>
      <dep:type>car</dep:type>
    </dep:moduleId>
    <dep:dependencies>
      <dep:dependency>
        <dep:groupId>com.ibm.db2</dep:groupId>
        <dep:artifactId>db2jcc</dep:artifactId>
        <dep:version>9.5</dep:version>
        <dep:type>jar</dep:type>
      </dep:dependency>
      <dep:dependency>
        <dep:groupId>com.ibm.db2</dep:groupId>
        <dep:artifactId>db2jcc_license_cu</dep:artifactId>
        <dep:version>9.5</dep:version>
        <dep:type>jar</dep:type>
      </dep:dependency>
    </dep:dependencies>
  </dep:environment>
  <resourceadapter>
    <outbound-resourceadapter>
      <connection-definition>
        <connectionfactory-interface>javax.sql.DataSource</connectionfactory-interface>
        <connectiondefinition-instance>
          <name>DB2_ds</name>
          <config-property-setting name="TraceFile"/>
          <config-property-setting name="UserName">db2admin</config-property-setting>
          <config-property-setting name="DatabaseName">sample</config-property-setting>
          <config-property-setting name="Password">db2admin</config-property-setting>
          <config-property-setting name="ServerName">localhost</config-property-setting>
          <connectionmanager>
            <local-transaction/>
            <single-pool>
              <max-size>10</max-size>
              <min-size>0</min-size>
              <match-one/>
            </single-pool>
          </connectionmanager>
        </connectiondefinition-instance>
      </connection-definition>
    </outbound-resourceadapter>
  </resourceadapter>
</connector>
```

In the `<dep:environment>` section, you can find the `moduleId` that identifies the resource or component being deployed; in the Administration Console the `moduleId` is displayed in the **Component Name** column on the **Database Pools** portlet.

Right after the `moduleId` is the definition of the dependencies. In this particular case, you can find three `<dep:dependency>` blocks pertaining to the DB2 JDBC driver and the license jar. The last "big" block in this plan is the `<resourceadapter>` where the connection parameters such as driver, user and password, connection URL, and so on are defined.

Deploying the datasource

To deploy the DB2 datasource you just created, run the following command from the `<geronimo_home>\bin` directory.

```
deploy --user system --password manager deploy <dep_plan_home>\db2-plan.xml ..\repository\org\tranql\tranql-connector-db2-xa\1.4\tranql-connector-db2-xa-1.4.rar
```

You will receive the following message:

```
D:\geronimo-tomcat6-jee5-2.2\bin>deploy --user system --password manager deploy \tmp\db2-plan.xml ..
\repository\org\tranql\tranql-connector-db2-xa\1.4\tranql-connector-db2-xa-1.4.rar
Using GERONIMO_BASE:    D:\geronimo-tomcat6-jee5-2.2
Using GERONIMO_HOME:    D:\geronimo-tomcat6-jee5-2.2
Using GERONIMO_TMPDIR:  D:\geronimo-tomcat6-jee5-2.2\var\temp
Using JRE_HOME:         C:\Java\jdk1.6.0\jre
    Deployed console.dbpool/DB2_ds/1.0/car
```

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