MySQL Setup on Local WildFly

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Overview

In the sections below, we will deploy the MySQL Connector/J driver as a core module of our local WildFly server. The deployment will enable the MySQL driver to be detected by the WildFly server. Also, a JDBC datasource will be created which will enable us to access the MySQL database without supplying credentials from within our code. This technique is an example of Context Dependency Injection (CDI). The JDBC datasource is maintained by the WildFly server and "injected" into our application when we specify the JNDI name in our Java class files.

We do not need to perform these steps on the remote server since that setup has already been accomplished. In the steps below, we configure the driver as a core module on the client using the jboss-cli.bat tool and add a datasource using the WildFly Admin page.

Note: version numbers will likely be different. Use the "latest stable" versions.

The steps in this tutorial should be performed **after** the following:

Local Installations/Configurations:

1. JDK
2. WildFly Local
3. NetBeans
4. Your local database
    a. database name: inew233800x00x
    b. database user: inew233800x00x
    c. password: from Web Credentials

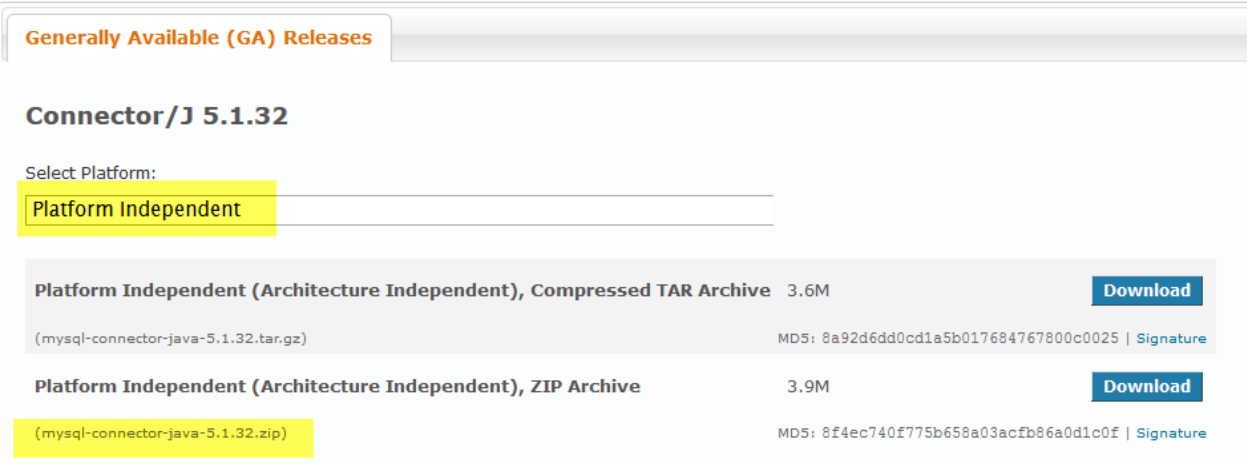
Remote:

5. Uploaded .war file(s) to your lineofcode.com student website and successfully tested your site.

Download the MySQL .JAR File

Download the latest stable mysql…jar (known as Connector/J) from the MySQL site:
http://dev.mysql.com/downloads/connector/j/

Be sure to select "Platform Independent" to get just the .jar file and not the installation package for Windows.



Install MySQL Driver as a Core Module (Local)

We have a choice to install the driver as a deployment or a core module. We elect the core module approach since it is more suitable for enterprise applications. By the way, using the jboss-cli (cmd line interface) is required to install the module in the server locally. And, recall from above that MySQL module installation is not required on the server since the module and JDBC datasource have already been configured by your professor.

Go to `WILDFLY_HOME\modules\system\layers\base\com` and create the folder **mysql** and then create the folder **main** inside of mysql (i.e. mysql\main).

Place the mysql…jar file you downloaded in the mysql\main folder.

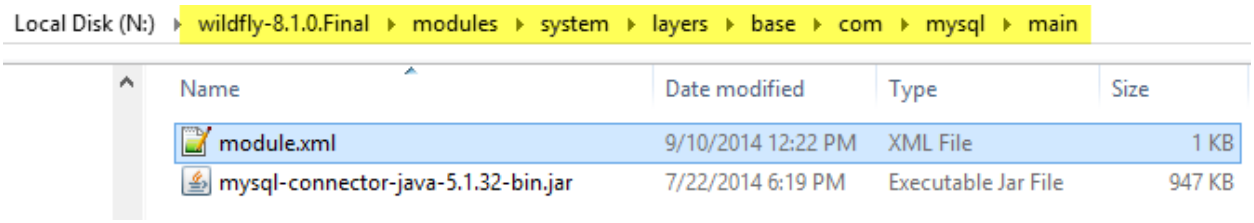
Create the file **module.xml** (see content) and place it in the mysql\main folder.

```
<?xml version="1.0" encoding="UTF-8"?>
  <module xmlns="urn:jboss:module:1.1" name="com.mysql">
     <resources>
         <resource-root path="mysql-connector-java-5.1.32-bin.jar"/>
     </resources>
     <dependencies>
         <module name="javax.api"/>
         <module name="javax.transaction.api"/>
     </dependencies>
 </module>
```

In module.xml, change the name of the resource-root to reflect the appropriate version of the .jar file you downloaded:

<resource-root path="mysql-connector-java-5.1.32-bin.jar"/>

The “main” folder should now contain the module.xml and mysql…jar files.



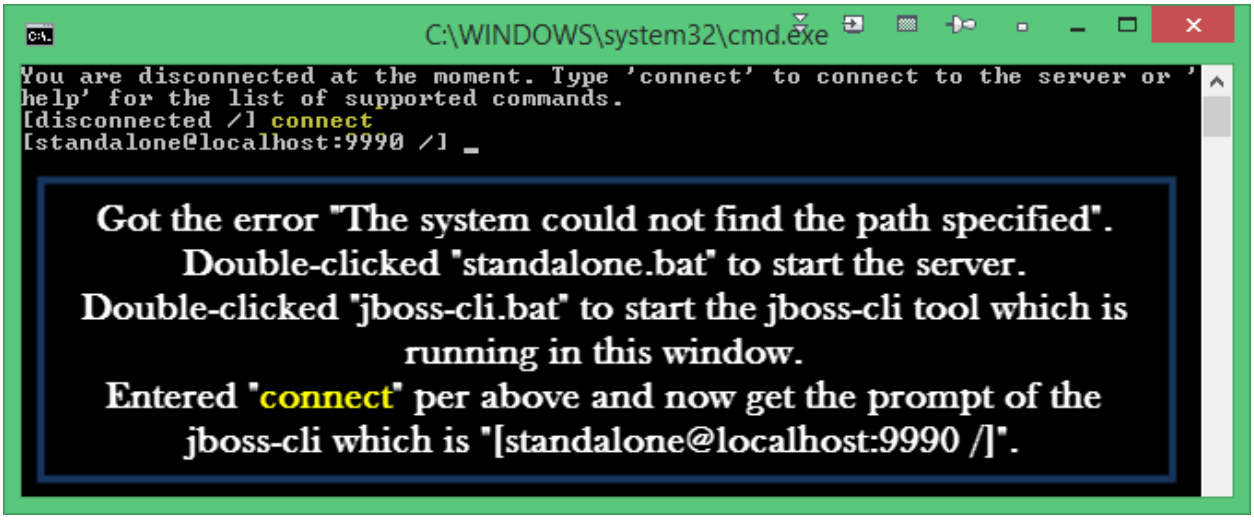
Navigate to the wildfy-8.1.0.Final\bin directory in the command window.

From the command line run: jboss-cli.bat –connect (that is 2 dashes prior to connect).

I received the error “The system cannot find the path specified.” when running the jboss-cli.bat command.

I then double-clicked “standalone.bat” in bin to run the WildFly server. After WildFly started, I double-clicked “jboss-cli.bat”, entered “connect” and successfully received the command prompt. By the way, the instructions at the wildfly.org link do specify to start WildFly prior to running the jboss-cli tools.

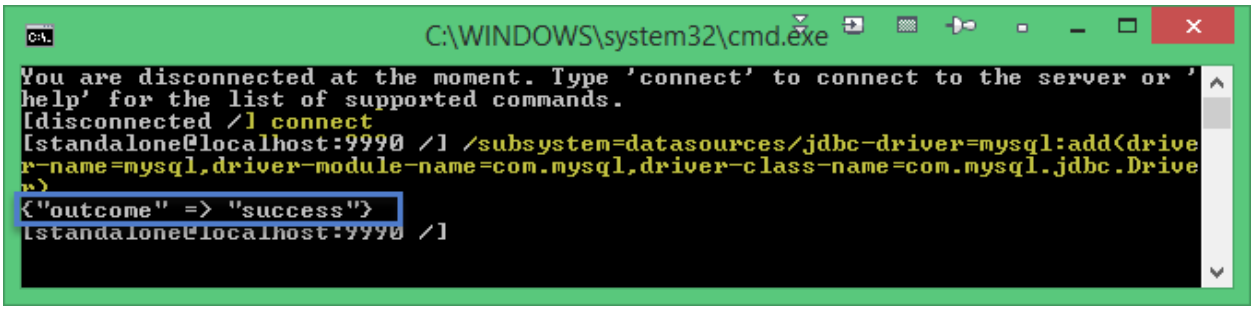
[standalone@localhost:9990 /] is the jboss-cli command prompt.



Now need to enter the string below at the jboss-cli prompt:

```
/subsystem=datasources/jdbc-driver=mysql:add(driver-name=mysql,driver-module-name=com.mysql,driver-class-name=com.mysql.jdbc.Driver)
```

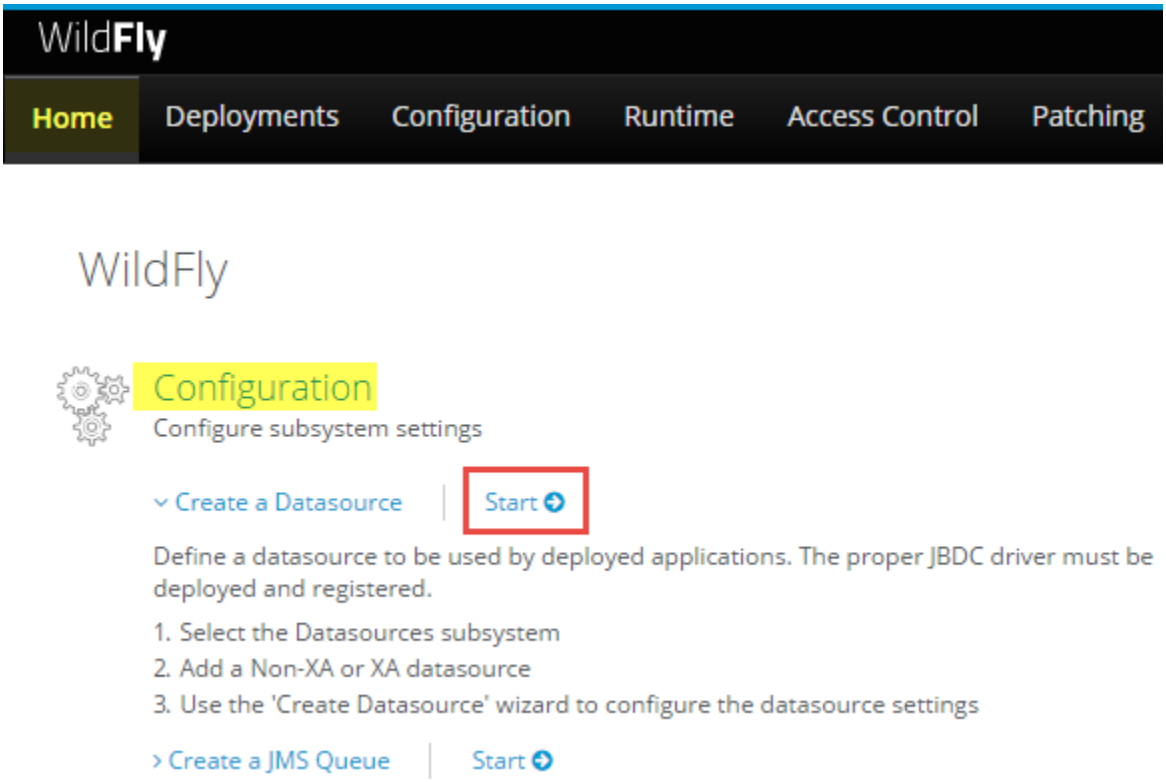
After the string is at the prompt, press enter. I received “outcome” => “success”. However, I have attempted the module addition before without success. When that happened, I stopped the server, closed the command window, restarted the server, restarted jboss-cli.bat. The command was then successful.



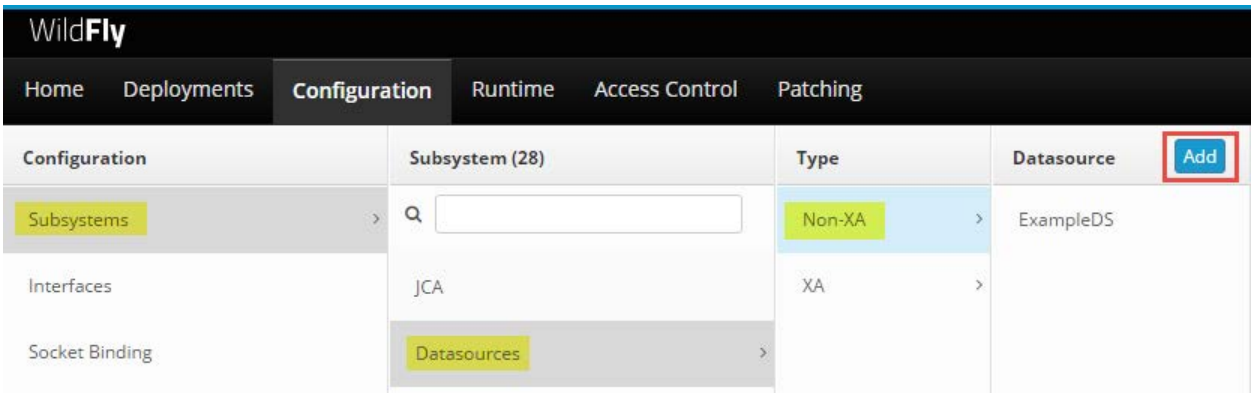
Now that the driver has been installed as a core module, we need to add a datasource for the connection to WildFly using the Admin page.

Add a Datasource via the WildFly Admin Page

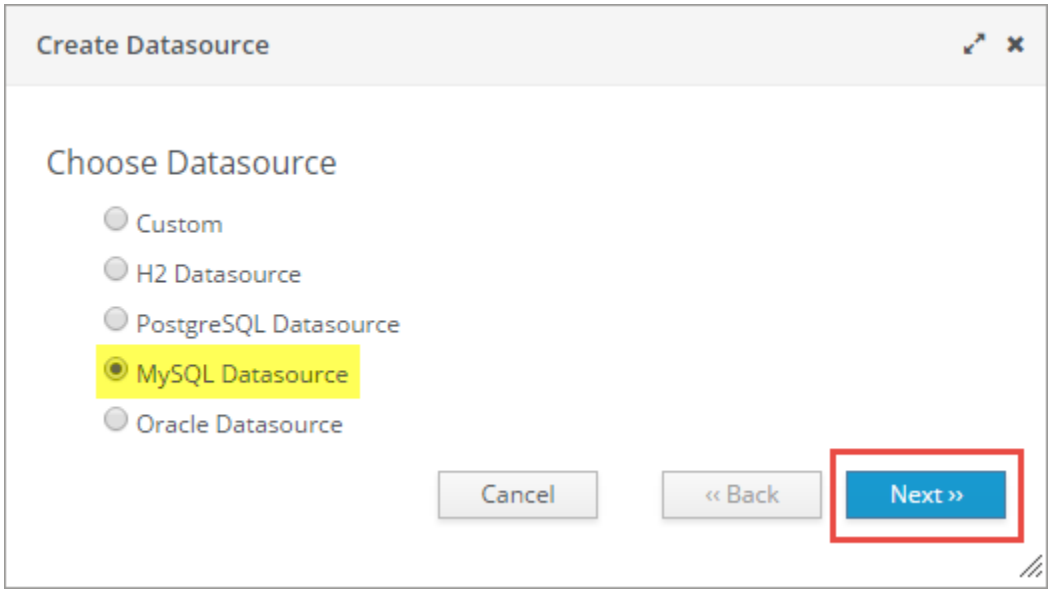
Start the WildFly local server if it is not running. Recall that you can start Wildfly from within NetBeans. In the browser, navigate to http://localhost:9990 which opens the WildFly Admin page. Enter your ManagementRealm credentials to login. Select Start in window below.



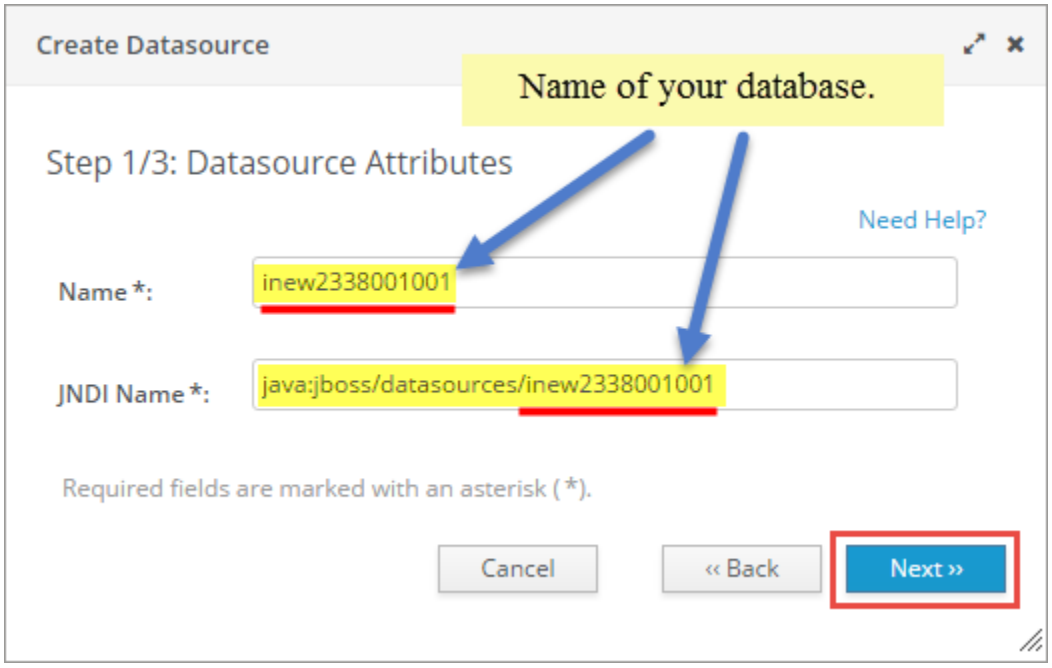
Select Subsystems | Datasources | Non-XA | Add.



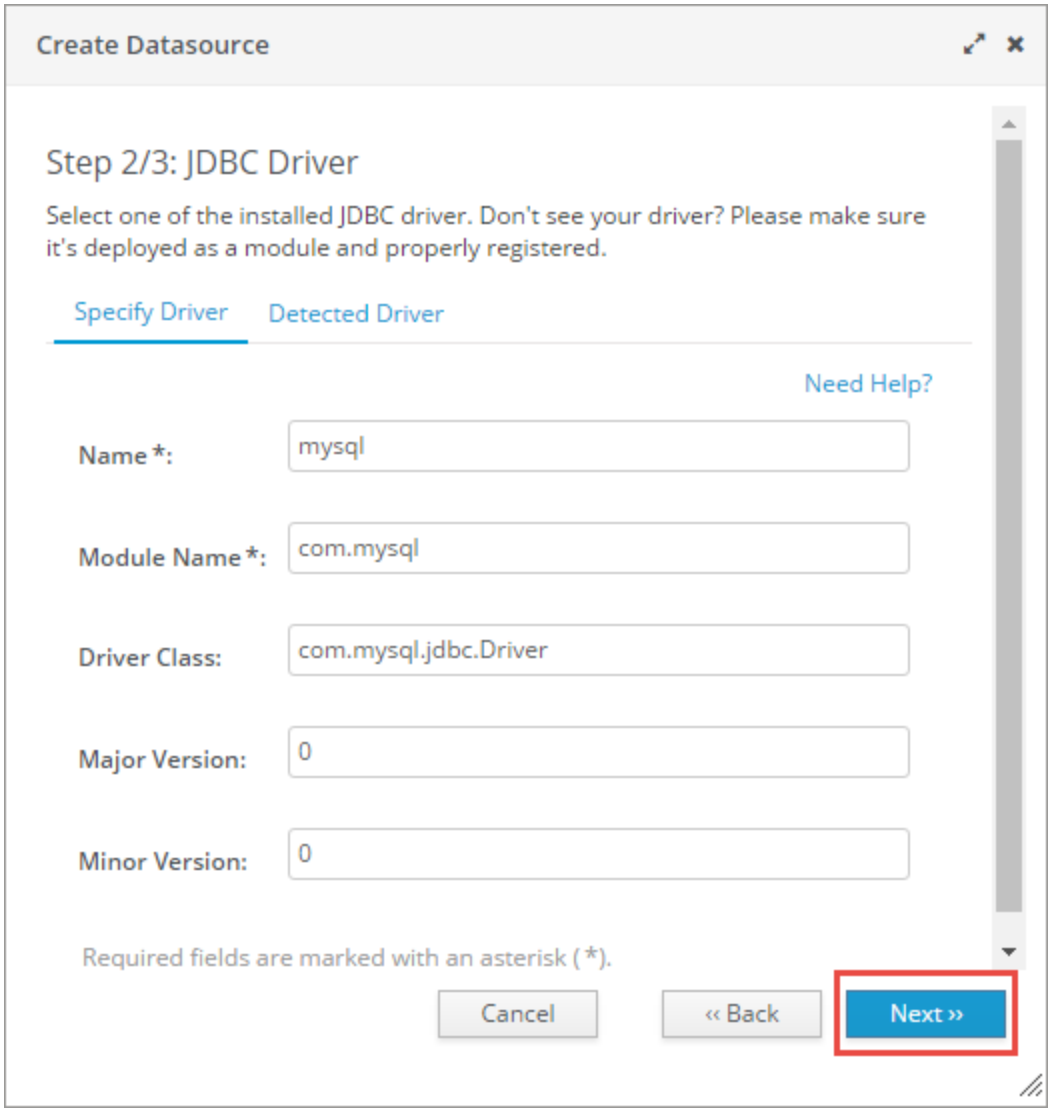
Choose MySQL for the type.



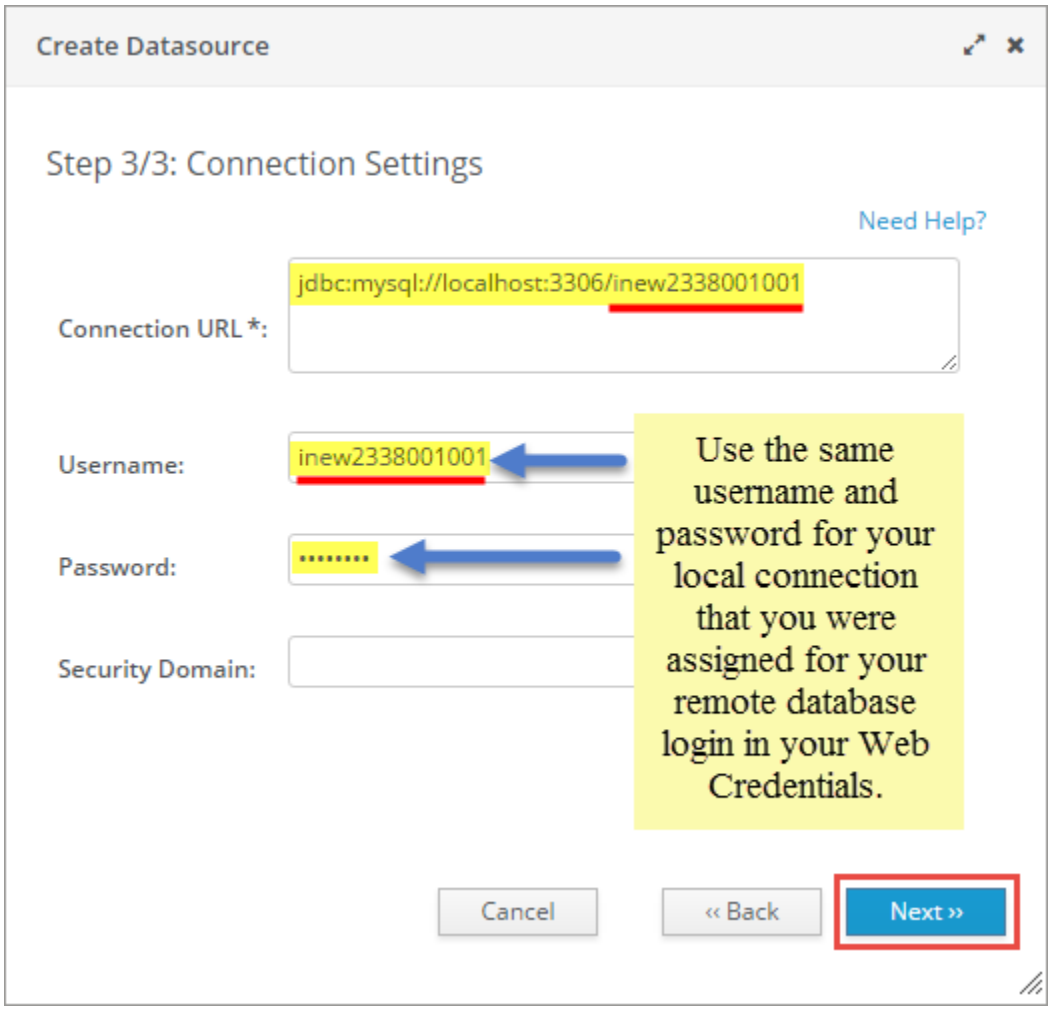
Complete Step 1/3:



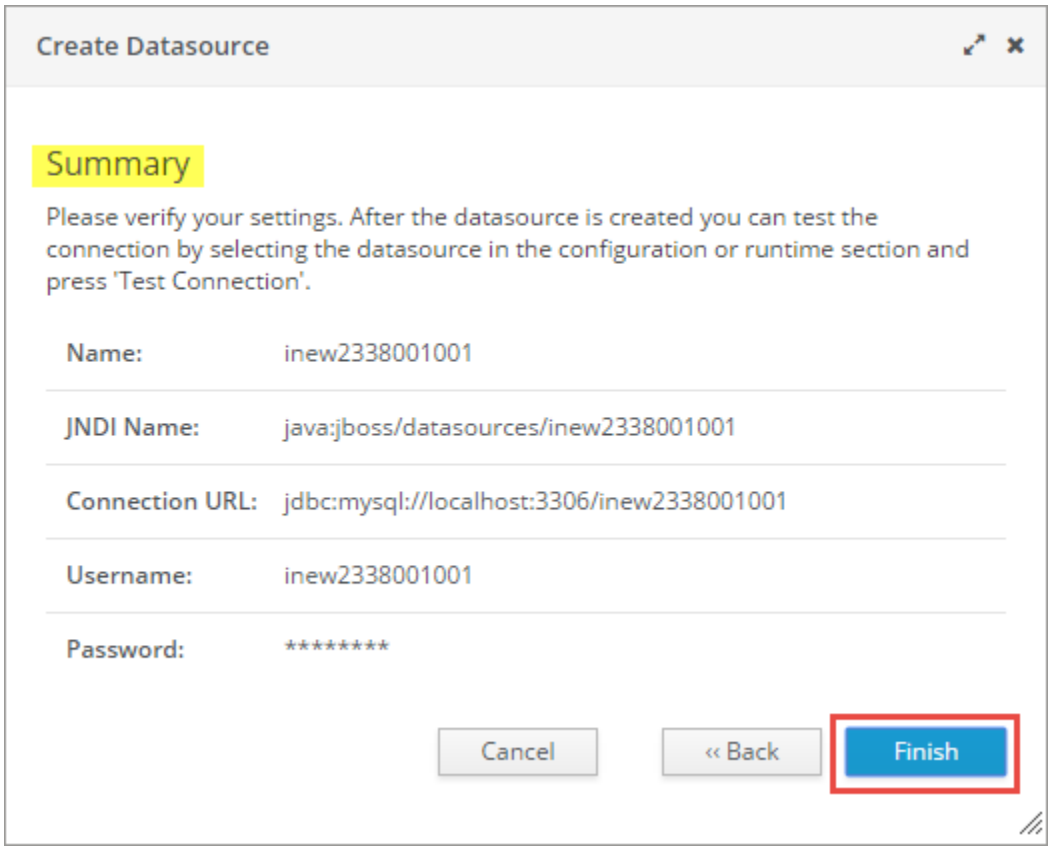
Complete Step 2/3: (MySQL should already be detected and populated as a result of the steps above to install the MySQL driver using the jboss-cli.bat tool.)



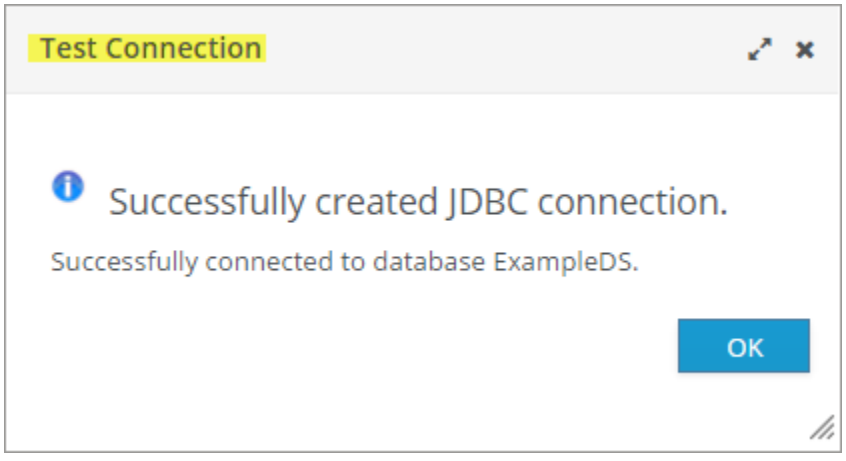
Complete Step 3/3:


Create Datasource
Step 3/3: Connection Settings
Need Help?
Connection URL *:
jdbc:mysql://localhost:3306/inew2338001001
Username:
inew2338001001
Password:
Security Domain:
Use the same username and password for your local connection that you were assigned for your remote database login in your Web Credentials.
Cancel
« Back
Next »

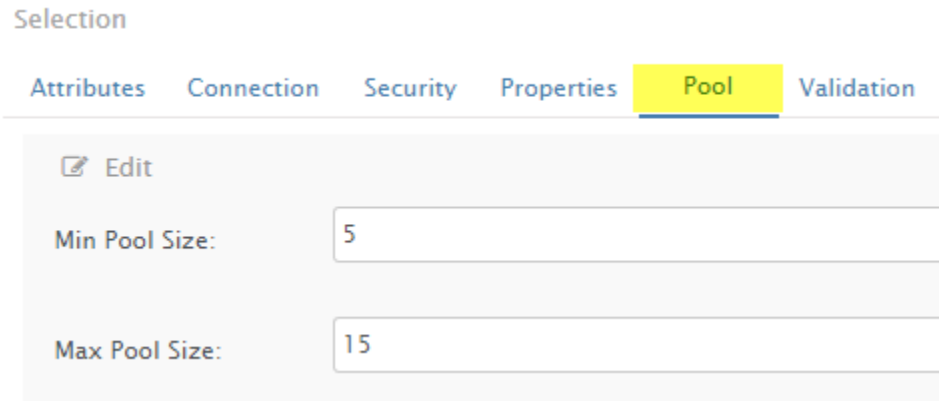
Summary.



You can test your connection at anytime by navigating to Runtime | Standalone Server | Subsystems | Datasources | View | Select the datasource | Test Connection



After the datasource has been created, select Enable | Pool | Edit and then add the following pool values.



The JDBC resource is maintained by the WildFly server and "injected" into our application when we specify the JNDI name in our Java class files.

Reminders:

- Be sure to use the correct information for the following since those are the settings for your lineofcode.com database:
  - database
  - datasource
  - username
  - password.
- No need to deploy the MySQL core module remotely. The module configuration has been performed by your professor.
- No need to configure a datasource remotely. Your datasource has been added by your professor. However, you must use the correcct configuration (more in the chapter covering the mysql-in-wildfly-setup-remote):
  - JNDI name: java:jboss/datasources/inew233800x00x (used in your Java class files for Programs 11 and 12)

The image below is from WildFly Admin Runtime | Standalone Server | Subsystems | Datasources | View which shows the JNDI (Java Naming and Directory Interface) name that should be used in your Java class files (Programs 11 and 12).