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(Computer Science Engineering)

## SOFTWARE ENGINEERING II PROJECT

### Part III: **Installation Guide**

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**A.A. 2014/15**

Project Title: **BidWin**

Project Repository: **<https://github.com/EmanueleLM/BidWin>**

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## **1. Introduction**

BidWin is a Web Application developed for the application server Glassfish 4 ( tested on 4.1, still version 4 works perfectly ) version and it uses a MySQL Database to save data. So, to execute it, it is necessary to install Glassfish Server. Below we reported the whole installation procedure. If you have already the JDK, Glassfish and MySQL in your machine please skip the next chapter.

## 2. Getting Started

### 2.1.Install JDK 7 or JDK 8

First things first, you need to install JDK 7 or 8.

Our system works with both the versions of the Java Development Kit, but we recommend the JDK 7 since we tested the system with that environment.

You can the recommended version [here](#).

And the JDK 8 form [here](#).

Please be sure you install the correct version of the JDK depending on your system (32 or 64 bits), and your Operating System (Windows, Linux etc.)

JDK 7 for ARM downloads have moved to the [JDK 7 for ARM download page](#).

### Java SE Development Kit 7u79

You must accept the [Oracle Binary Code License Agreement for Java SE](#) to download this software.

☐ Accept License Agreement ☒ Decline License Agreement

Product / File Description	File Size	Download
Linux x86	130.4 MB	<a href="#">jdk-7u79-linux-i586.rpm</a>
Linux x86	147.6 MB	<a href="#">jdk-7u79-linux-i586.tar.gz</a>
Linux x64	131.69 MB	<a href="#">jdk-7u79-linux-x64.rpm</a>
Linux x64	146.4 MB	<a href="#">jdk-7u79-linux-x64.tar.gz</a>
Mac OS X x64	196.89 MB	<a href="#">jdk-7u79-macosx-x64.dmg</a>
Solaris x86 (SVR4 package)	140.79 MB	<a href="#">jdk-7u79-solaris-i586.tar.Z</a>
Solaris x86	96.66 MB	<a href="#">jdk-7u79-solaris-i586.tar.gz</a>
Solaris x64 (SVR4 package)	24.67 MB	<a href="#">jdk-7u79-solaris-x64.tar.Z</a>
Solaris x64	16.38 MB	<a href="#">jdk-7u79-solaris-x64.tar.gz</a>
Solaris SPARC (SVR4 package)	140 MB	<a href="#">jdk-7u79-solaris-sparc.tar.Z</a>
Solaris SPARC	99.4 MB	<a href="#">jdk-7u79-solaris-sparc.tar.gz</a>
Solaris SPARC 64-bit (SVR4 package)	24 MB	<a href="#">jdk-7u79-solaris-sparcv9.tar.Z</a>
Solaris SPARC 64-bit	18.4 MB	<a href="#">jdk-7u79-solaris-sparcv9.tar.gz</a>
Windows x86	138.31 MB	<a href="#">jdk-7u79-windows-i586.exe</a>
Windows x64	140.06 MB	<a href="#">jdk-7u79-windows-x64.exe</a>

Once you downloaded and installed the JDK that best fits with your system, you are ready to install the WebServer: we are going to use Glassfish 4.1.

### 2.2.Install Glassfish 4

You can install Glassfish server after downloading from [this](#) link and unpacking it in the folder you desire. Note that it is important that your download is not corrupt. You can check it with the MD5 or SHA-256 code included in the link.

It is fundamental that you use the correct version of the Glassfish Server since we built our application on that environment.

Maybe you want to try our webapp on Glassfish 3 and let us know if it works.



The screenshot shows the GlassFish download page at <https://glassfish.java.net/download.html>. The page title is "GlassFish - World's first Java EE 7 Application Server". The main heading is "GlassFish Server Open Source Edition 4.1 Download". Below this, there are tabs for "GlassFish Open Source Edition", "Nightly Builds", "Java EE SDK", "Maven", "Oracle GlassFish Server", and "Earlier Releases". The "GlassFish Open Source Edition" tab is selected. The page is divided into four steps: Step 0: Prerequisite, Step 1: Download, Step 2: Install, and Step 3: Start. Step 0 states that Java EE 7 requires JDK 7 or above, and JDK 8 u20 or above is recommended for GlassFish 4.1. Step 1 shows two download options: "Java EE 7 Web Profile" with a link to "glassfish-4.1-web.zip" and "Java EE 7 Full Platform" with a link to "glassfish-4.1.zip". Step 2 shows the command "unzip glassfish-4.1\*zip" and a note that this command will extract GlassFish with a preconfigured 'Domain1' domain. Step 3 shows the command "glassfish4/bin/asadmin start-domain".

Once you have unzipped the archive you can start the server by this command

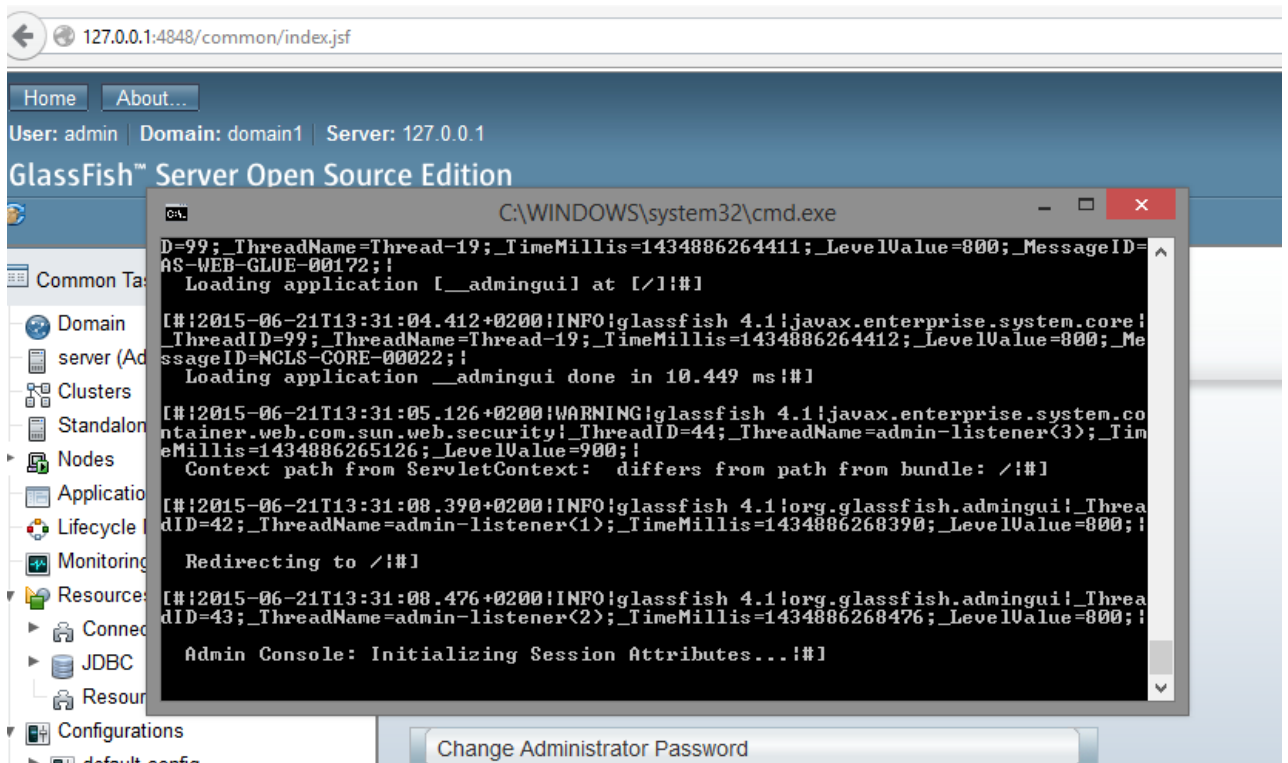
```
glassfish4/bin/asadmin start-domain
```

## 2.3.Start The Glassfish Server

Now you can start the glassfish server using this command - in your command line -

```
glassfish4/bin/asadmin start-domain
```

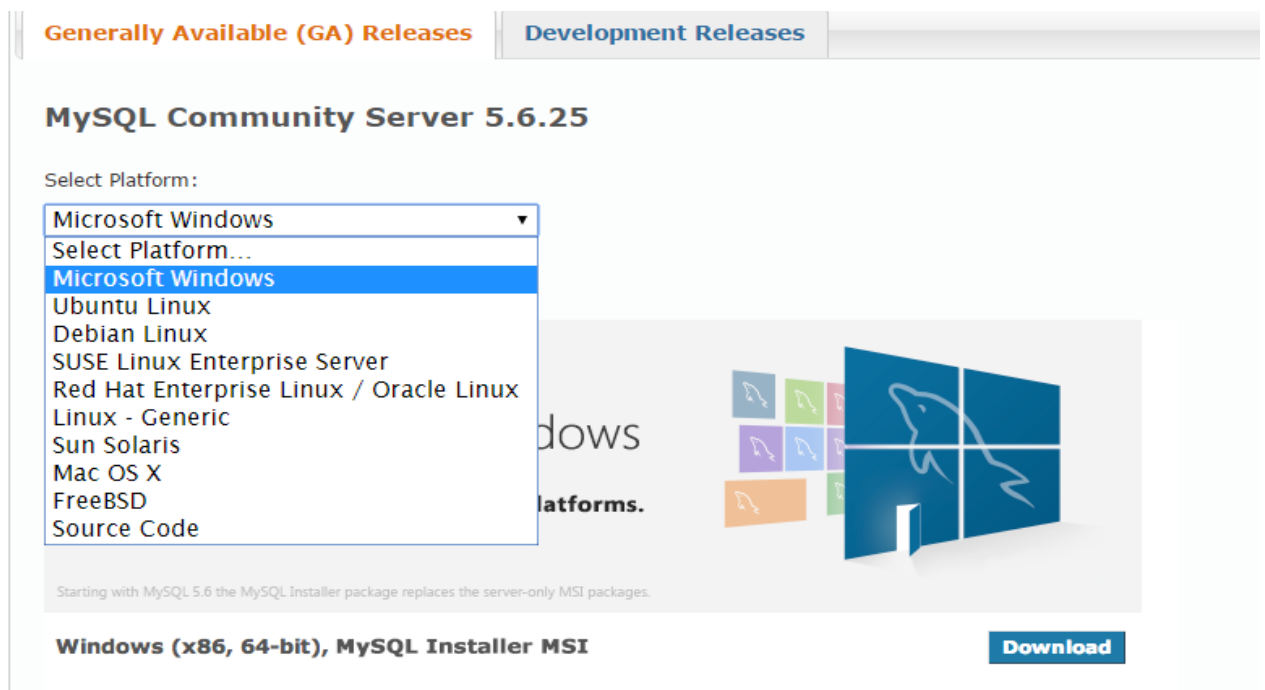
Here's the output under Windows: if everything is ok with your server, you should obtain something like this. Go to this [link](#), and you'll open a glassfish window where you can manage several things, like connectors, deployed apps etc.



## 2.4. Install the MySQL community server

Now we need the database server.

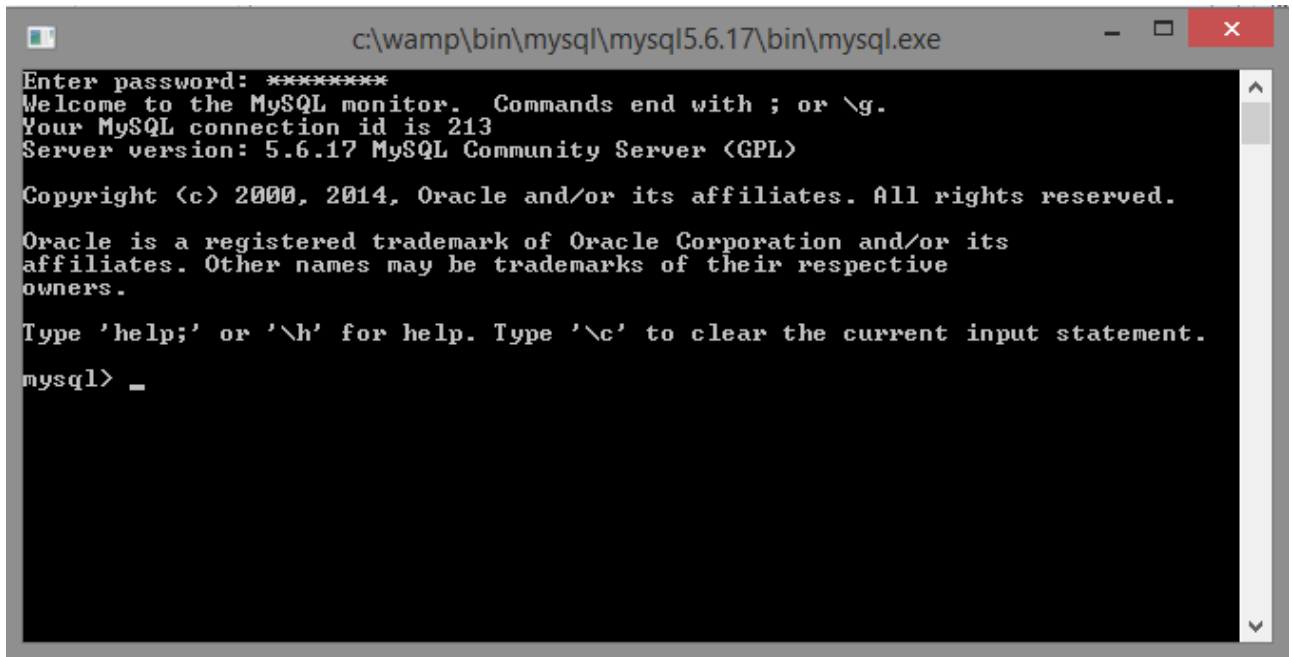
Since we used a MySQL database, we recommend you to use MySQL Database Server: you can find the latest version [here](#).



Then install it on the system being careful that:

- your administrator name has to be *root*;
- your MySQL Server Port has to be *3306*;
- mysql command is inserted in the PATH variable (only for Windows systems);

Once you launched the console, it ask you for the password: than you should obtain something like this.



```
c:\wamp\bin\mysql\mysql5.6.17\bin\mysql.exe
Enter password: *****
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 213
Server version: 5.6.17 MySQL Community Server (GPL)

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affiliates. Other names may be trademarks of their respective
owners.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> _
```

**Please note:** on Windows machine you can have some problem while starting MySql.

One of the most common problem is due to a port conflict with Skype.

In order to solve this problem, just open the Task Manager and delete the Skype process, or better change the default port in your Skype configuration.

If you have [Xampp](#) installed on your computer, you don't need the MySql server since it would be still present.

### 3. Database Configuration

#### 3.1. Create the MySql schema

Now you can create the database: just open your MySql console and write this command.

```
source /path/to/bidwinreal.sql;
```

Where /path/to/ is the path where you have the bidwinrealm.sql

By default we recommend you to put it on your Desktop and delete it after you gave the command.

You can find the bidwinrelam.sql in the project folder **bidwin\build\web\resources**. Copy the text in a new bidwinreal.sql file and execute the previous command.

If it is easier to you, just download it from [here](#).

#### 3.2. Install MySql Java Connector

Now you have to install the MySQL Java Connector in Glassfish to let the Glassfish Server communicate with the MySQL Server. It can be downloaded [here](#) and extracted.

As recommended by the software developers, check the integrity of your download with the MD5 checksum.

**Generally Available (GA) Releases**

### Connector/J 5.1.35

Select Platform:

Microsoft Windows	
Select Platform...	
Microsoft Windows	
Platform Independent	

(mysql-connector-java-gpl-5.1.35.msi)

5.1.35	6.2M	<a href="#">Download</a>
--------	------	--------------------------

MD5: 3830aea289a5ae6a4073bc501499161a | [Signature](#)

We suggest that you use the [MD5 checksums](#) and [GnuPG signatures](#) to verify the integrity of the packages you download.

Once you have installed it on your system, you are - almost - ready to deploy the application!



### 3.3 Adding the Glassfish Connectors

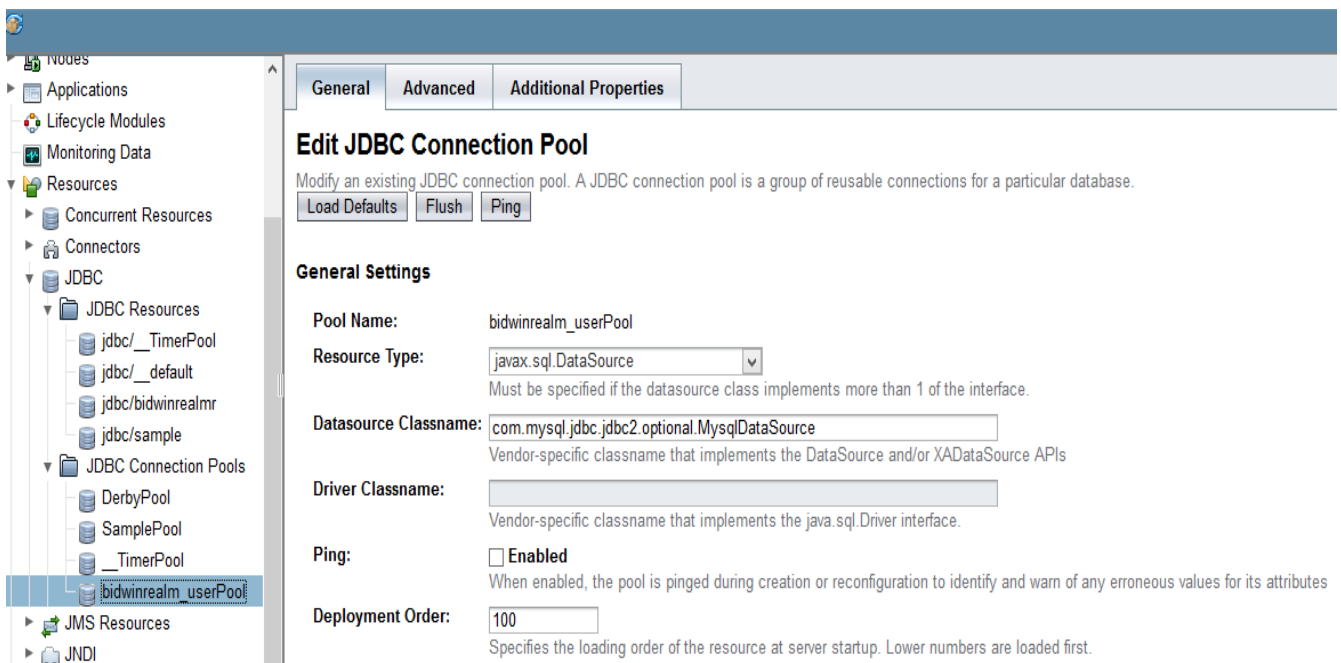
Now we create the connectors that allows our webapp - which is hosted on the Glassfish server - to interact with the database.

We will create a Connector - with the bidwinrealm database -, a Pool and a Realm Connector. You can download the connectors here: by copying them in the Glassfish/ folder you will skip all the configuration phase (with the related issues!)

Anyway follows the commands to recreate them from scratch.

Just create a connector and a pool, than the realm and connect them.  
Follows the screenshots:

#### Bidwinrealm\_userPool



Here's the properties (set them in Additional Properties or in the creation phase)

**User:** user

**Password:** user

**ServerName:** localhost

**DatabaseName:** bidwinrealm

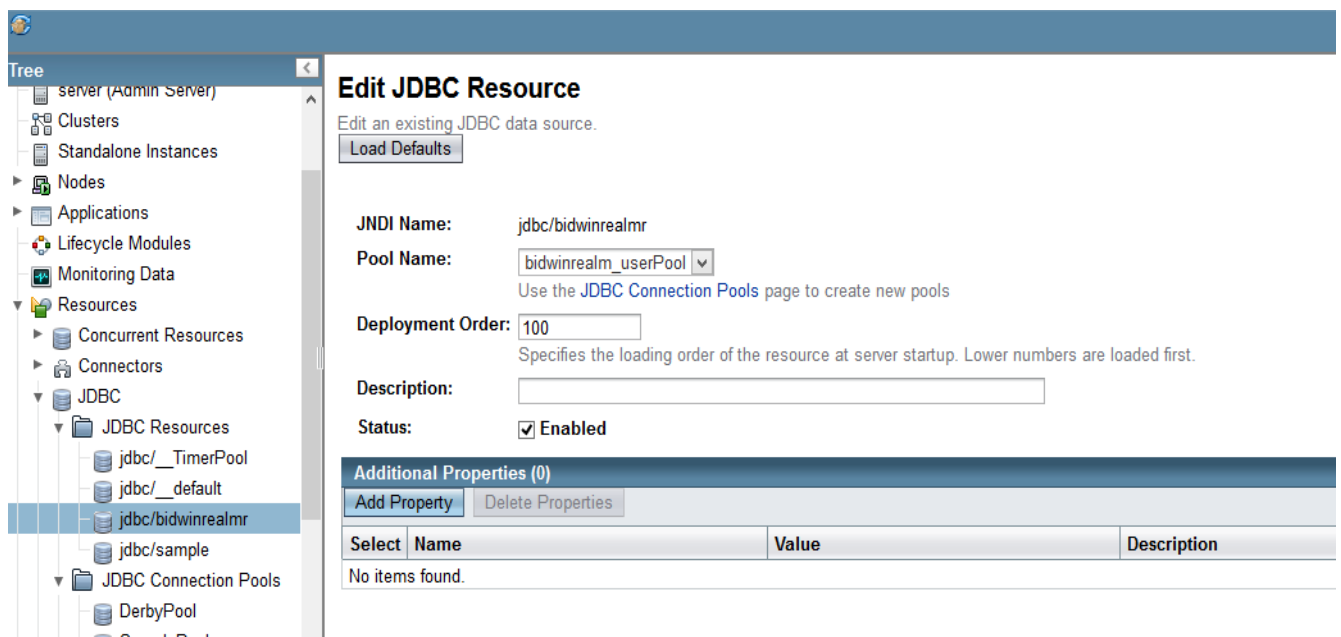
**Port:** 3306

And, if they are not set up automatically, please set also:

**URL:** jdbc:mysql://localhost:3306/bidwinrealm?zeroDateTimeBehavior=convertToNull

**Url:** jdbc:mysql://localhost:3306/bidwinrealm?zeroDateTimeBehavior=convertToNull

Now you can create a JDBC resource: just create a jdbc named **jdbc/bidwinrealmr** and add the connection pool in the Pool Name menu.  
Here's the screenshot:



And last but not least the realm: just create one in the section Configuration → ServerConfig → Security → Realms → New

Here's the content of the fields:

**Name:** authjdbcRealm

**ClassName:** com.sun.enterprise.security.auth.realm.jdbc.JDBCRealm

**JAAS Context:** jdbcRealm

**JNDI:** jdbc/bidwinrealmr

**User Table:** bidwinrealm.users

**User Name Column:** Username

**Password Column:** Password

**Group Table:** bidwinrealm.user\_groups

**Group Name Column:** group\_id

**Password Encryption Algorithm:** MD5

**Charset:** UTF-8

Here's the screenshot:

---

Realm Name: authjdbcRealm  
Class Name: com.sun.enterprise.security.auth.realm.jdbc.JDBCRealm

**Properties specific to this Class**

JAA3 Context: *	jdbcRealm <small>Identifier for the login module to use for this realm</small>
JNDI: *	jdbc/bidwinrealmr <small>JNDI name of the JDBC resource used by this realm</small>
User Table: *	bidwinrealm.users <small>Name of the database table that contains the list of authorized users for this realm</small>
User Name Column: *	Username <small>Name of the column in the user table that contains the list of user names</small>
Password Column: *	Password <small>Name of the column in the user table that contains the user passwords</small>
Group Table: *	bidwinrealm.user_groups <small>Name of the database table that contains the list of groups for this realm</small>
Group Table User Name Column:	 <small>Name of the column in the user group table that contains the list of groups for this realm</small>
Group Name Column: *	group_id <small>Name of the column in the group table that contains the list of group names</small>
Password Encryption Algorithm: *	MD5 <small>This denotes the algorithm for encrypting the passwords in the database. It is a security risk to leave this field empty.</small>
Assign Groups:	 <small>Comma-separated list of group names</small>
Database User:	 <small>Specify the database user name in the realm instead of the JDBC connection pool</small>
Database Password:	 <small>Specify the database password in the realm instead of the JDBC connection pool</small>
Digest Algorithm:	 <small>Digest algorithm (default is SHA-256); note that the default was MD5 in GlassFish versions prior to 3.1</small>
Encoding:	 <small>Encoding (allowed values are Hex and Base64)</small>
Charset:	UTF-8

Glassfish has to be restarted after giving these commands (this can be done with “asadmin restart-domain”).

If you get a narrow error (org.eclipse.persistence.exceptions.DatabaseException Internal Exception: java.sql.SQLException: No database selected Error Code: 1046) while trying to access the database (login phase), this is the solution.

You have to modify the URL and Url fields in the jdbc connector in this way:

<input type="checkbox"/>	UseReadAheadInput	true
<input type="checkbox"/>	ParseInfoCacheFactory	com.mysql.jdbc.PerConnectionLRUFactory
<input type="checkbox"/>	DefaultFetchSize	0
<input type="checkbox"/>	URL	jdbc:mysql://localhost:3306/bidwinrealm
<input type="checkbox"/>	Url	jdbc:mysql://localhost:3306/bidwinrealm
<input type="checkbox"/>	AllowMasterDownConnections	false

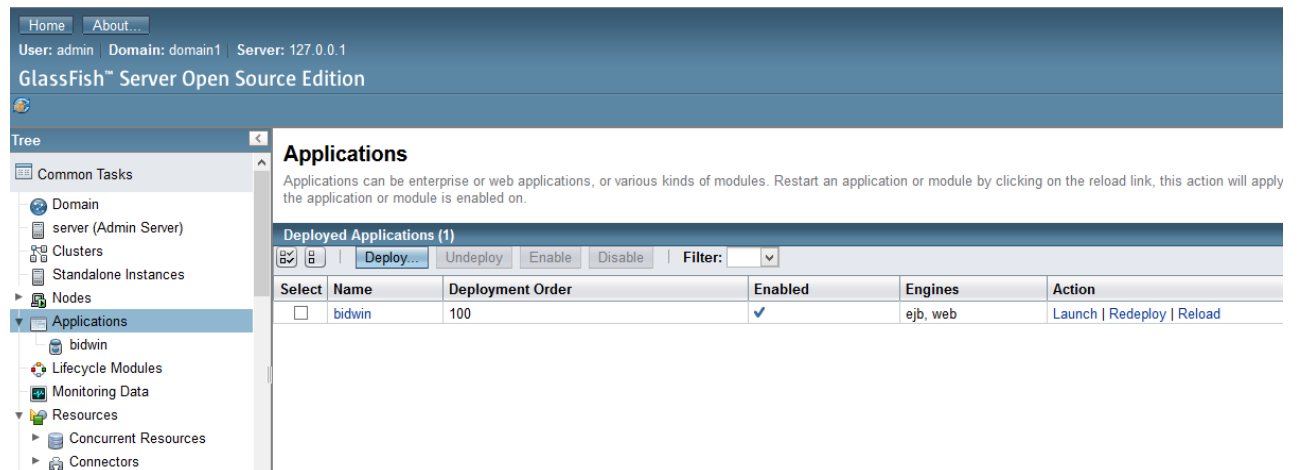
## 4. Application Deployment

### 4.1. Install the application in Glassfish

You can deploy the application with the command.

```
asadmin deploy filename.war
```

Now you can try the webapp: just go in the section “deployed app” in the glassfish administration console and click on “*Launch*”.



You will be redirected to the login page.

{User, User} is the admin ( he cannot participate to the auctions! )

{momo, password} is one of the default users: our hint is to create an entirely new set of users.

---

**BidWin: Login Form**

Username:

Password:

Login

Not yet a registered user? Please [Register!](#)

[Admin](#)