

POLITECNICO DI MILANO

ENGINEERING OF COMPUTING SYSTEMS



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MeteoCal

Installation Guide

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1 Introduction

MeteoCal is a Web app developed for Glassfish 4.1 application server and it uses a MySQL Database to save data. In the next chapter we reported the installation procedure that is required to start the application. If you have already the JDK, Glassfish and MySQL installed in your machine you can skip the next chapter.

2 Getting started

2.1 Install JDK 8

To install Java SE Development Kit 8, please visit this site [JDK 8](#), click on Accept license agreement and select your platform specs.

The screenshot shows the Oracle Java SE Development Kit 8 Downloads page. The page has a navigation bar with links like Sign In/Register, Help, Country, Communities, I am a..., I want to..., and a Search bar. Below the navigation bar, there are tabs for Overview, Downloads, Documentation, Community, Technologies, and Training. The main content area is titled "Java SE Development Kit 8 Downloads" and contains a thank you message, a description of the JDK, and a list of links for downloading the JDK. There is also a section for "Java SE Development Kit 8u31" with a license agreement section and a table of download links for Linux x86 and Linux x86_64.

Product / File Description	File Size	Download
Linux x86	135.24 MB	jdk-8u31-linux-i586.rpm
Linux x86_64	154.91 MB	jdk-8u31-linux-i586.tar.gz

2.2 Install Glassfish 4.1

Glassfish probably is already integrated in JDK 8, if you don't have it you can install it from [here](#)

The screenshot shows the GlassFish Server Open Source Edition 4.1 Download page. The page has a navigation bar with links like GlassFish Open Source Edition, Nightly Builds, Java EE SDK, Maven, Oracle GlassFish Server, and Earlier Releases. Below the navigation bar, there are steps for installation: Step 0: Prerequisite, Step 1: Download, Step 2: Install, Step 3: Start, and Step 4: Load Console. The page also contains a table of download links for Java EE 7 Web Profile and Java EE 7 Full Platform.

Product / File Description	File Size	Download
Linux x86	135.24 MB	jdk-8u31-linux-i586.rpm
Linux x86_64	154.91 MB	jdk-8u31-linux-i586.tar.gz

2.3 Install MySql Community Server

To complete the installation we have to install the Database Server that our application will use. We use a MySQL Database, a free version of the Community Server is available [here](#)



3 Database configuration

3.1 Start Mysql server

In Linux/OSX systems, open terminal and type:

- `sudo /usr/local/mysql/support-files/mysql.server [start—stop—restart]`

For Windows systems, you can use this [guide](#)

3.2 Create database schema

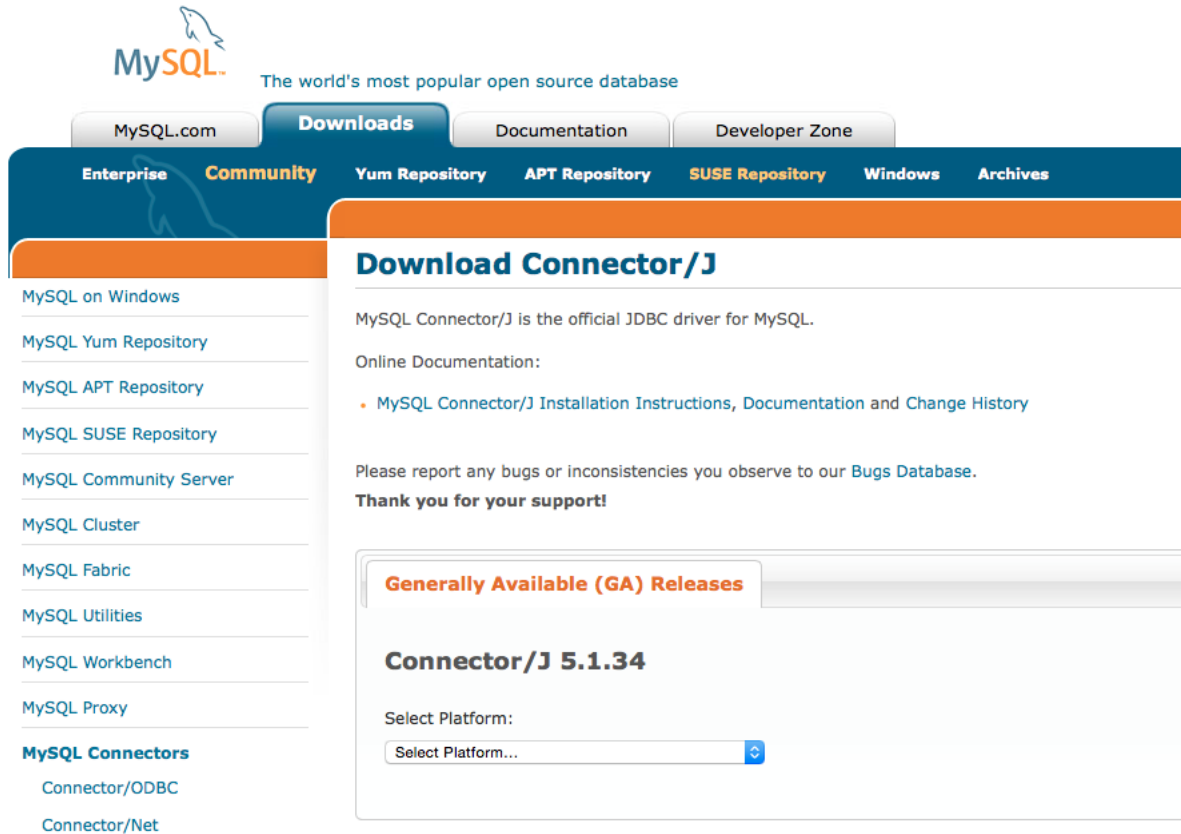
To create a new database in Unix systems, type:

- `mysql -u root -p`
- type mysql password (default root)
- `create schema meteocaldb`

3.3 Install MySql Java Connector

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

Then you have to copy the extracted .jar file in Glassfish installation directory to make it work.



4 Glassfish configuration

4.1 How to import our Glassfish domain configuration

From CLI go to the Glassfish installation directory, and then go to *glassfish/bin* in this directory exec the following command to install our configuration:

- `restore-domain -backupdir directory domain1`

where directory is the path to the domain1 directory given with the installation files.

4.2 How to start and stop Glassfish domain server

From CLI:

- `glassfish/bin/asadmin start-domain`
- `glassfish/bin/asadmin stop-domain`

For accessing Glassfish admin panel open your browser and go to this URL <http://localhost:4848>. Default username and password are both "admin". Now we present the default values that we have used in the previous configuration. You can edit these values, but remind that all values are coherent to our application.

4.3 JDBC Connection with MySQL

Open glassfish admin panel, go to JDBC and then JDBC connection pool. If you have imported our domain configuration you can check the correctness of the values (mySQL username and password, database name etc.) by clicking on MeteoCalPool link, otherwise you can create a new connection pool.

Here we present our configuration:

- Insert a name: MeteoCalPool
- Resource type: javax.sql.DataSource
- Database Driver Vendor: MySql
- click on next, cancel all the existing properties and add these one
- DatabaseName: meteocaldb
- User: root
- Password: root
- URL: jdbc:mysql://localhost:3306/meteocaldb
- ServerName: localhost

If you create a new connection pool, you have to go under JDBC Resources and create a new resource (jdbc/meteocalresource) and then assign the new mySQL pool, otherwise you can skip this operation.

Edit JDBC Connection Pool Properties

SaveCancel

Modify properties of an existing JDBC connection pool.

Pool Name: MeteoCalPool

Additional Properties (5)

Add PropertyDelete Properties

Select	Name	Value	Description
<input type="checkbox"/>	URL	<input type="text" value="jdbc:mysql://localhost:3306/meteocaldb"/>	<input type="text"/>
<input type="checkbox"/>	ServerName	<input type="text" value="localhost"/>	<input type="text"/>
<input type="checkbox"/>	Password	<input type="text" value="root"/>	<input type="text"/>
<input type="checkbox"/>	User	<input type="text" value="root"/>	<input type="text"/>
<input type="checkbox"/>	DatabaseName	<input type="text" value="meteocaldb"/>	<input type="text"/>

4.4 Form based authentication with JDBCRealm

Follow these steps for creating a JDBCRealm or skip them if you have imported our configuration:

- enter Glassfish control panel
- Configurations -> server-config -> security -> Realms -> new...
- Realm Name: must be the same referenced in the web.xml (jdbcRealMeteoCal)
- Class name: JDBCRealm
- JAAS Context: jdbcRealm
- your data base resource name: jdbc/meteocalresource
- User table: user
- User Name Column: Username
- Password Column: Password
- Group Table: user
- Group Name Column: Groupname
- Password Encryption Algorithm: MD5
- Digest Algorithm: SHA-256
- Server restart may be required

Configuration Name: server-config

Realm Name: jdbcRealMeteoCal

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

Properties specific to this Class

JAAS Context: *	<input type="text" value="jdbcRealm"/> Identifier for the login module to use for this realm
JNDI: *	<input type="text" value="jdbc/meteocalresource"/> JNDI name of the JDBC resource used by this realm
User Table: *	<input type="text" value="user"/> Name of the database table that contains the list of authorized users for this realm
User Name Column: *	<input type="text" value="Username"/> Name of the column in the user table that contains the list of user names
Password Column: *	<input type="text" value="Password"/> Name of the column in the user table that contains the user passwords
Group Table: *	<input type="text" value="user"/> Name of the database table that contains the list of groups for this realm
Group Table User Name Column:	<input type="text"/> Name of the column in the user group table that contains the list of groups for this realm
Group Name Column: *	<input type="text" value="Groupname"/> Name of the column in the group table that contains the list of group names
Password Encryption Algorithm: *	<input type="text" value="MD5"/> This denotes the algorithm for encrypting the passwords in the database. It is a security risk to leave this field empty.

5 Deploy and launch the WAR file

To finish the installation of the application you must follow this steps:

- start the glassfish server domain previously configured
- enter in the glassfish admin panel
- Go on Applications tab and then click on Deploy
- select from the file chooser the MeteoCal.war file given with the installation files and then click on Go button to confirm the choice.
- finally if you want to start MeteoCal application, click on Launch and follow the link.