

# INSTALLATION MANUAL

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# 1 Introduction

Thanks for choosing to install and use the MeteoCal system.

This document will guide you through the installation procedure on your system.

Please follow closely the instructions provided to avoid any problems or errors.

## 2 Software requirements

To install the MeteoCal system you will need to have the following software already installed on your system.

Make sure that they are all already correctly functioning before proceeding to the next section.

- **Java SE Development Kit 8**  
<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>
- **Glassfish Open Source Edition 4.1**  
<https://glassfish.java.net/download.html>
- **MySQL Community Server**  
<https://dev.mysql.com/downloads/mysql/>
- **MySQL Connector/J**  
<https://dev.mysql.com/downloads/connector/j/>  
Install instructions are available at  
<https://dev.mysql.com/doc/connector-j/en/connector-j-usagenotes-glassfish-config.html>

## 3 Installation procedure

### 3.1 Create the database

1. Make sure you have started the MySql server.  
Instructions for Windows are available at  
<https://dev.mysql.com/doc/mysql-startstop-excerpt/5.7/en/windows-server-first-start.html>  
<https://dev.mysql.com/doc/mysql-startstop-excerpt/5.7/en/windows-server-first-start.html>

On Linux/OSX use the command:

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

2. From your shell login as root on mysql using the command:

```
shell> mysql -u root -p
```

3. Create the "meteocal" database with the following command:

```
mysql> create database meteocal;
```

### 3.2 Configure Glassfish

1. Make sure you have downloaded **MySQL Connector/J** and placed it in the appropriate folder like this

```
/glassfish-install-path/domains/domain-name/lib/
```

2. Start or restart the Glassfish server either from a IDE of your choice like Netbeans or from the shell with the command

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

To stop the server use

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

3. Access the Glassfish control panel at

```
http://localhost:4848
```

The default username and password are both `admin`.

4. Make sure to follow closely the following steps.

Using the navigation tree in the Glassfish control panel navigate to **Resources > JDBC > JDBC Connection Pools** and click the **New...** button.

5. Enter as **Pool name** the name `meteocalpool`

6. Select as **Resource type** the type `javax.sql.DataSource`

7. Select as **Database Driver Vendor** the option `MySQL`

8. Click on the **Next** button and scroll down to the **Additional properties** section to set the following fields.

9. Set the **DatabaseName** field to `meteocal`

10. Set the **ServerName** field to `localhost`

11. Set the **User** field to `root`

12. Set the **Password** field with the password of the root user.
13. Set the **Url** field to `jdbc:mysql://:3306/meteocal`
14. Set the **URL** field to `jdbc:mysql://:3306/meteocal`
15. Scroll to the bottom, or back to the top, and click the **Finish** button.  
You should now have the `meteocalpool` listed in your pools.
16. Click on the `meteocalpool`, click on the **Advanced** tab and scroll down to **Connection Validation** section to set the following fields.
17. Set the **Connection Validation** field to **Required**
18. Set the **Validation Method** field to **table**
19. Set the **Table Name** field to **DUAL**
20. Click on the **Save** button.  
To test the pool click on `meteocalpool` and then click the **Ping** button.
21. Using the navigation tree in the Glassfish control panel navigate to **Resources > JDBC > JDBC Resources** and click the **New...** button.
22. Set the **JNDI Name** field to `jdbc/meteocal`
23. Under **Pool Name** select `meteocalpool`
24. Click the **OK** button to create the resource.  
You should now have the `jdbc/meteocal` resource listed in your resources.
25. Using the navigation tree in the Glassfish control panel navigate to **Configurations > server-config > Security > Realms** and click the **New...** button.
26. Set the **Realm Name** field to `meteocalRealm`
27. Set the **Class Name** field to `JDBCRealm`
28. Set the **JAAS Context** field to `jdbcRealm`
29. Set the **JNDI** field to `jdbc/meteocal`
30. Set the **User Table** field to **USERS**

31. Set the **User Name Column** field to **username**
32. Set the **Password Column** field to **password**
33. Set the **Group Table** field to **USERS**
34. Set the **Group Table User Name Column** field to **username**
35. Set the **Group Name Column** field to **groupname**
36. Set the **Password Encryption Algorithm** field to **MD5**
37. Set the **Digest Algorithm** field to **SHA-256**
38. Click on the **Save** button at the bottom.  
You should now have the **meteocalRealm** listed in your realms.
39. Restart the Glassfish server to complete the configuration procedure.

### 3.3 Deploy MeteoCal

1. Make sure that you have downloaded the **meteocal-se2.war** package that came with this manual.  
If you need to download it go to the project page at  
<https://code.google.com/p/meteocal-se2/source/browse/>
2. The Glassfish server must be running.  
Access the Glassfish control panel at  
<http://localhost:4848>
3. Using the navigation tree in the Glassfish control panel navigate to **Applications**  
and click the **Deploy...** button.
4. Select from your file system the **meteocal-se2.war** package as the package to be uploaded to the server.
5. The deployment page should update.  
Click the **OK** button at the top of the page to deploy MeteoCal.  
You should now have the **meteocal-se2** application listed in your applications.
6. To launch the application click on the **Launch** option under the **Action** column.

7. Follow the first link in the newly loaded page or directly go to  
`http://localhost:8080/meteocal-se2/`
8. You are now able to use the MeteoCal service.

## 4 Problems and support

If you encounter any problem while configuring the sever or deploying the application please make sure that you have followed closely the provided steps and that your system has all the required software.

If you need further assistance contact the author at  
`scibona.edoardo [at] gmail.com`  
or visit the project home page at  
`https://code.google.com/p/meteocal-se2/`