MeteoCal

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Installation and Configuration Manual

Introduction

The following document shows all steps to do to use MeteoCal. This handbook shows installation and configuration of all the software needed for use the web application.

Document structure:

- System requirements
- Software installation
- Software configuration
- Deployment

All needed files are in the same folder of this document or will be provided a download link.

System Requirements

Operation System:

The application has been developed using Java EE 7, so each operation system using Java Runtime Environment Enterprise Edition 7 should support it. The software has been tested on Windows 7, Windows 8, Windows 8.1 and Ubuntu.
The operation system must also be supported by Oracle GlassFish Server 4.1 and by DBMS MySQL 5.6.22.
Is needed enough disk space and ram to make it all work too (1 GB each one is enough).
There is also need a browser that support HTML 5, JavaScript and CSS 3. MeteoCal has been tested on Mozilla Firefox 35.0 and Google Chrome 39. The browser must also support coockies.

Software Installation

- Java SE Runtime Environment 7u75
  Go to this page, download and install JRE 7u75 for your operating system.
- Java EE SDK and GlassFish 4.1
  Go to this page and download Java EE 7 SDK Update 1.
  Extract the zip file wherever you want.
- MySql 5.6.22
  Go to this page and download MySQL Community Server 5.6.22 after selecting your operating system (Linux users may already have MySQL Server in their system repository)
  For installation follow the official guide. During installation you will be asked which products to install, be sure to install MySQL Server and MySQL Workbench (the last needed only for a simple configuration of the database but not necessary), however “Developer Installation” should be sufficient.

Software Configuration

Database Configuration:

Will show the step using MySQL workbench but that can be done also through other tool to handle the administration of MySQL (eg: phpmyadmin) or directly by the terminal.

Start the server
First of all you must create database schema. Open MySQL Workbench and connect to local instance that is created. Go to the *Startup/Shutdown* tab and click on *Start Server*. This process starts MySQL server. When GlassFish is on MySQL server must be always alive. The same button will be used to shutdown MySQL server after use (and only when GlassFish is OFF).

Create New User
After running MySQL server, go to *Users and Privileges* tab and click on *Add Account*. Set:
- Login name: MeteoCal
- Password: meteocal
- From Administrative Roles tab select DBA

Confirm with *Apply* button.

Create new schema
Because the application doesn't create the tables in the database automatically, you should import (*File → Run SQL Script*) in workbench the following file:

init_database.sql

It is a simple sql script that can be imported in many database administration software or directly through SQL command line.
This script creates both the database and tables.

GlassFish configuration:

Connector
First of all copy the mysql connector (*mysql-connector-java-5.1.26-bin.jar)* inside */glassfish4/glassfish/domains/[domainname]/lib/ext* folder.You can find mysql connector in MySQL installation folder or you can download it from here.

Run the server
Now you can run GlassFish server going to /glassfish4/bin/ folder and executing from command line

asadmin start-domain

To stop the server (don't do it now!) execute from tha same folder

asadmin stop-domain

UNIX users may have to add "./" at the beginning of the command.

Create a Connection Pool
Open a web browser an go to the following URL: http://localhost:4848, will be open GlassFish

administration page if you started the server. To login use:
User: admin
Password: [empty]
Firs of all create a connection pool: go in *Resources -> JDBC ->JDBC Connection Pools* and click on new. Set the parameters as follows:
- Name: MeteoCalPool
- Resource Type: javax.sql.DataSource
- Database Driver Vendor: MySQL

Click on *Next*. In Additional Properties search and set:
- User: MeteoCal
- Password: meteocal
- ServerName: localhost
- DatabaseName: meteocal

Click on Finish. Now, if you click on the name of the connection newly created and click on *ping* a message shows you if the connection with the database works.

Create a Resource
Now we will create a resource so that an application running inside GlassFish can access to the database.
Change tab to *JDBC Resources* (*Resources -> JDBC → JDBC Resources*) and click on *New*.
JNDI Name: jdbc/MeteoCal
Pool Name: MeteoCalPool

Click on *OK*.

Configure the login realm
Go in the tab *Configurations -> Server-config -> Security-> Realms* and click on *New*.
Set the following parameters:

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

JAAS Context: jdbcRealm
JNDI: jdbc/MeteoCal
User Table: USERS
User Name Column: EMAIL
Password Column: PASSWORD
Group Table: USERS
Group Table User Name Column: EMAIL
Group Name Column: GROUPNAME
Password Encryption Algorithm: MD5
Digest Algorith: SHA-256

Click on *OK*.

Configure the MailServer
Go in the tab *Resources → JavaMail Sessions* and click on *New*.
Set the following parameters (without []):

JNDI Name: mail/Gmail
Mail Host: smtp.gmail.com

Default User: [Your GMAIL account user]
Default Server Address: [Your GMAIL account user]

Add the following additional proprieties:

Name	Value
mail.smtp.socketFactory.class	javax.net.ssl.SSLSocketFactory
mail.smtp.password	[Your GMAIL password]
mail.smtp.auth	true
mail.smtp.socketFactory.failback	false
mail.smtp.port	465
mail.smtp.socketFactory.port	465

Click on *OK*.
You also have to open this link: https://myaccount.google.com, login with your gmail account, and change *Access for less secure app* to *Enable.*

Deployment

Packet Upload
For application deploy go to /glassfish4/bin/ folder and executing from command line

asadmin delpoy [MeteoCalSoftEng2.war_path]

Will be shown a confirmation message if the deployment is correctly performed.
Now you can run the application visiting this URL: http://localhost:8080/MeteoCalSoftEng2/

To delete web application using the following command

asadmin undeploy [MeteoCalSoftEng2.war_path]

UNIX users may have to add "./" at the beginning of the command. All command should be executed without [].

Uninstall
If you want remove the application (why would you do this?) just do the undeploy from the server and delete all the configuration added on GlassFish and the database schema created.