



Department of
Computer Science and Engineering

MeteoCal

Project development for the 2014 Software Engineering 2 Course

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Installation

Guide

System Description

MeteoCal is a web application, that provides his user with a lot of services related to personal event management. Users will need only a browser and no plugin installation is required.

In our design we dedicated particular attention to the friendliness of usage of our service. Our first purpose is to provide the user with the easiest and lightest interaction possible considered the complexity of the functionalities we decided to offer.

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1. Required software

To install our application the user will need the following software on his machine:

- JDK 1.8.31+ (<http://www.oracle.com/technetwork/java/javase/downloads/jdk8-downloads-2133151.html>)
- Glassfish 4.1 (<https://glassfish.java.net/download.html>)
- MySql Community Server (<http://dev.mysql.com/downloads/mysql/>)
- MySql Java connector (<http://dev.mysql.com/downloads/connector/j/>)

Optional, but suggested:

- Netbeans 8 (<https://netbeans.org/downloads/>)

2 Installation tutorial

Once the components have been installed execute mysql from terminal. (On Windows system we suggest to add %MySql Install Folder%\MySQL Server 5.6\bin to the PATH system variable)

If the PATH variable has been added you can execute MySql from terminal by typing:

```
mysql -u root -p
```

Enter your root password and write the following commands:

```
create database meteocaldb;
```

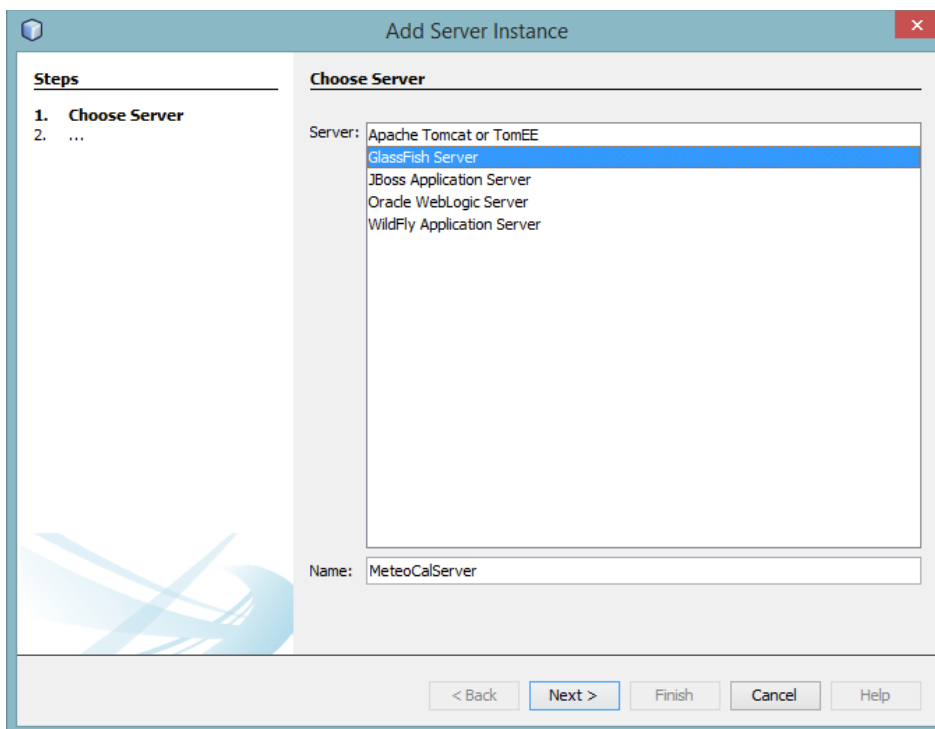
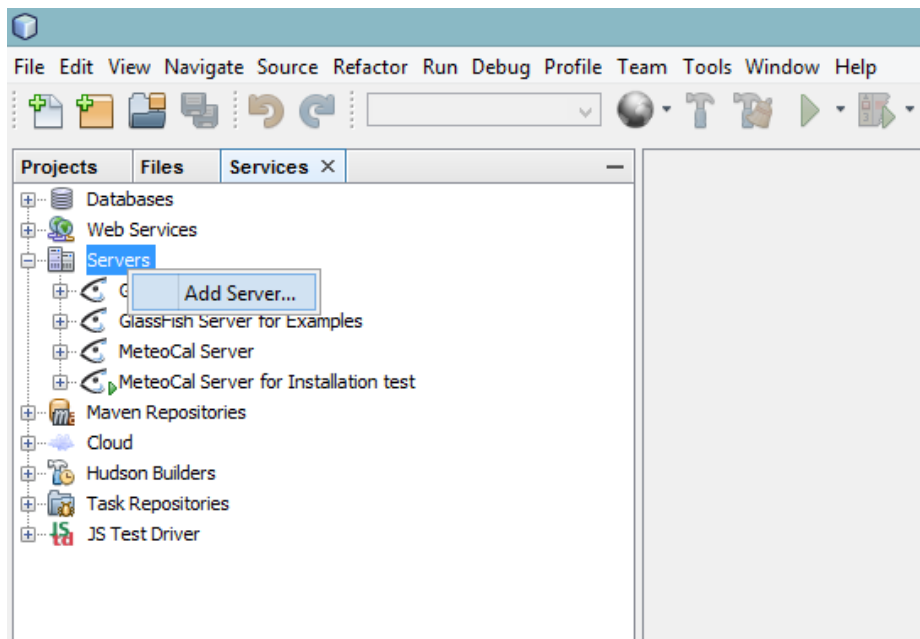
```
create user 'meteocal_user'@'localhost' identified by 'password'
```

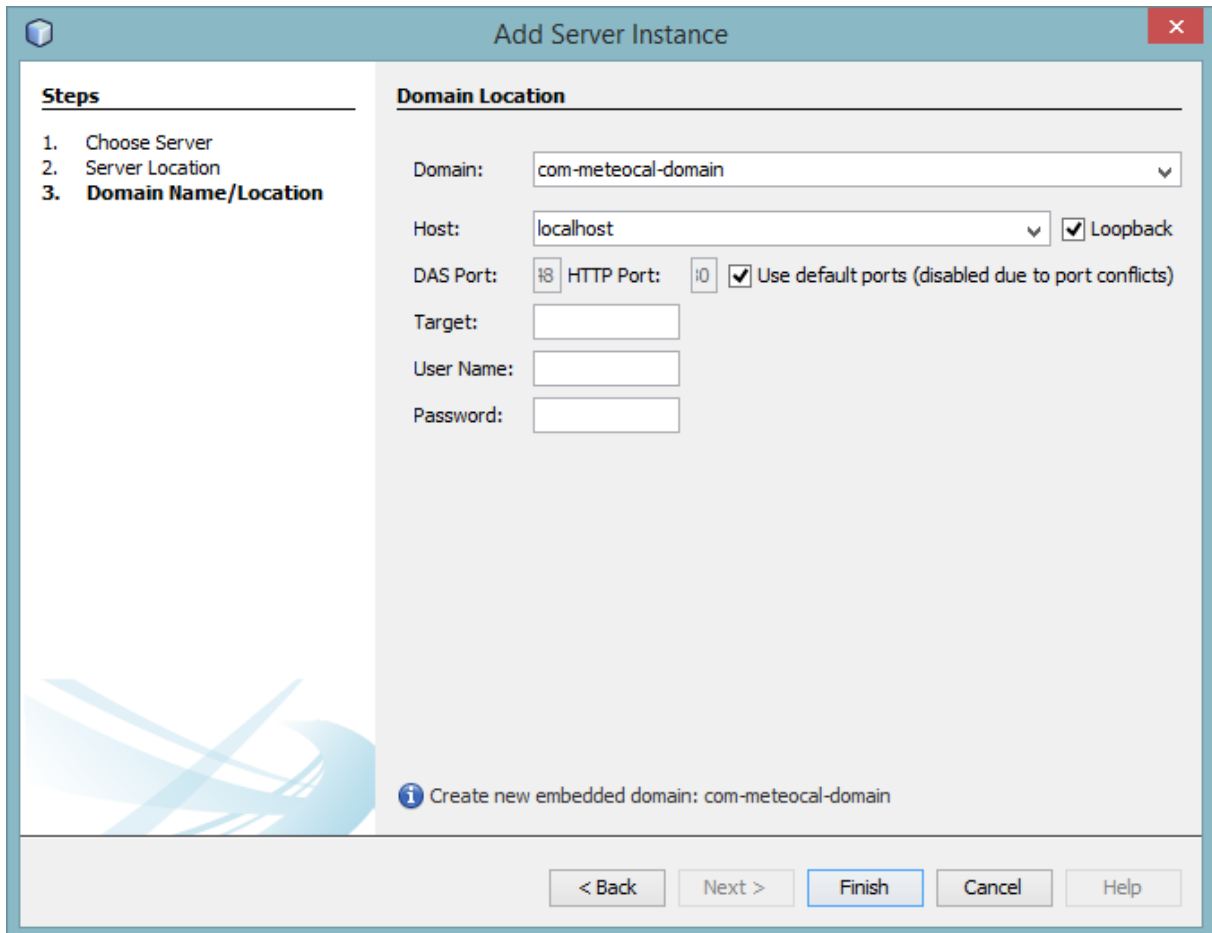
```
grant all on meteocaldb.* to 'meteocal_user'@'localhost'
```

Then place mysql-connector-java-5.1.34-bin.jar (extracted from the MySql Java connector) in the folder %Glassfish installation folder%\glassfish\modules

Then start the Glassfish server. This can be done by command line or in GUI environments. One of these is Netbeans, that we will use in this tutorial.

Go to the Services tab, under the voice Servers and follow the visual instruction from these screens:





The "Add Server Instance" dialog box is shown with the "Domain Location" tab selected. The "Steps" pane on the left lists: 1. Choose Server, 2. Server Location, and 3. Domain Name/Location. The "Domain Location" section contains the following fields: "Domain:" (a dropdown menu showing "com-meteocal-domain"), "Host:" (a dropdown menu showing "localhost" with a checked "Loopback" checkbox), "DAS Port:" (a text box with "18"), "HTTP Port:" (a text box with "10"), and a checked checkbox for "Use default ports (disabled due to port conflicts)". Below these are empty text boxes for "Target:", "User Name:", and "Password:". At the bottom of the dialog, there is an information icon and the text "Create new embedded domain: com-meteocal-domain". Navigation buttons at the bottom include "< Back", "Next >", "Finish" (highlighted), "Cancel", and "Help".

Steps

1. Choose Server
2. Server Location
3. Domain Name/Location

Domain Location

Domain: com-meteocal-domain

Host: localhost ☒ Loopback

DAS Port: 18 HTTP Port: 10 ☒ Use default ports (disabled due to port conflicts)

Target:

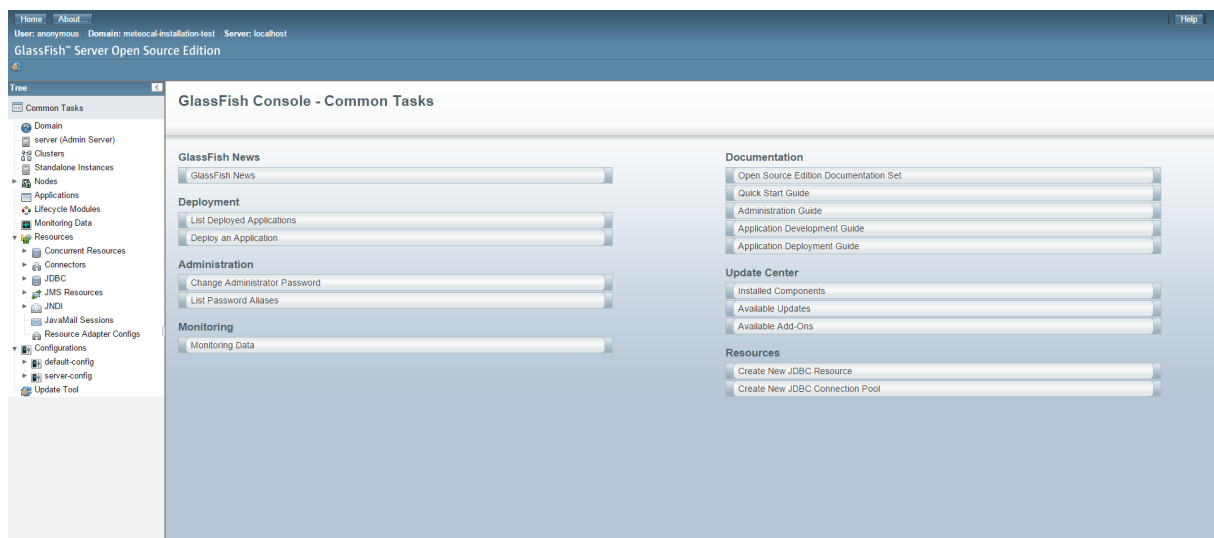
User Name:

Password:

i Create new embedded domain: com-meteocal-domain

< Back Next > Finish Cancel Help

Confirm, wait for the domain creation. When this operation is finished right click on the new server and choose “View Domain Admin Console”. In the browser, you should see a page like this:



Then Resources/JDBC Connection Pools, choose to create a new one and enter the following data:

Home About...

User: anonymous Domain: meteocal-installation-test Server: localhost

GlassFish™ Server Open Source Edition

Tree

- Common Tasks
- Domain
 - server (Admin Server)
- Clusters
- Standalone Instances
- Nodes
- Applications
- Lifecycle Modules
- Monitoring Data
- Resources
 - Concurrent Resources
 - Connectors
 - JDBC
 - JDBC Resources
 - JDBC Connection Pools
 - JMS Resources
 - JNDI

New JDBC Connection Pool (Step 1 of 2)

Identify the general settings for the connection pool.

General Settings

Pool Name: *

Resource Type:
Must be specified if the datasource class implements more than 1 of the interface

Database Driver Vendor:
Select or enter a database driver vendor

Introspect: ☒ **Enabled**
If enabled, data source or driver implementation class names will enable introspection

Next

Additional Properties (5)		
<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="button" value="Add Property"/> <input type="button" value="Delete Properties"/>		
Select	Name	Value
<input type="checkbox"/>	ServerName	<input type="text" value="localhost"/>
<input type="checkbox"/>	Port	<input type="text" value="3306"/>
<input type="checkbox"/>	DatabaseName	<input type="text" value="meteocaldb"/>
<input type="checkbox"/>	User	<input type="text" value="meteocal_user"/>
<input type="checkbox"/>	Password	<input type="text" value="password"/>

Finish.

Click on the new pool from the list and press Ping to verify that the connection works.

Home About...

User: anonymous Domain: meteocal-installation-test Server: localhost

GlassFish™ Server Open Source Edition

Tree

- Common Tasks
- Domain
 - server (Admin Server)
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- Resources
 - Concurrent Resources
 - Connectors
 - JDBC
 - JDBC Resources
 - JDBC Connection Pools
 - DerbyPool
 - __TimerPool
 - connectionToMeteocalDB

General Advanced Additional Properties

✓ Ping Succeeded

Edit JDBC Connection Pool

Modify an existing JDBC connection pool. A JDBC connection pool is a group of reusable connections for a

Load Defaults Flush Ping

General Settings

Pool Name: connectionToMeteocalDB

Resource Type: javax.sql.DataSource
Must be specified if the datasource class implements more than 1 of the interfa

Datasource Classname: com.mysql.jdbc.jdbc2.optional.MysqlDataSource
Vendor-specific classname that implements the DataSource and/or XDataSource

Driver Classname:
Vendor-specific classname that implements the java.sql.Driver interface.

Ping: ☐ Enabled
When enabled, the pool is pinged during creation or reconfiguration to identify ar

Deployment Order: 100

Then create a new JDBC resource and enter the following data:

Home About...

User: anonymous Domain: meteocal-installation-test Server: localhost

GlassFish™ Server Open Source Edition

Tree

- Common Tasks
- Domain
 - server (Admin Server)
- Clusters
- Standalone Instances
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- Applications
- Lifecycle Modules
- Monitoring Data
- Resources
 - Concurrent Resources
 - Connectors
 - JDBC
 - JDBC Resources
 - JDBC Connection Pools
 - DerbyPool
 - __TimerPool
 - connectionToMeteocalDB
 - JMS Resources

New JDBC Resource

Specify a unique JNDI name that identifies the JDBC resource you want to create. The

JNDI Name: * jdbc/connectionToMeteocalDB

Pool Name: connectionToMeteocalDB
Use the JDBC Connection Pools page to create new pools

Description:

Status: ☒ Enabled

Additional Properties (0)

Add Property Delete Properties

Select	Name	Val
No items found.		

Then, under Configurations > server-config > Security > Realms, create a new Realm with the following data:

The screenshot shows the GlassFish Server Open Source Edition administration console. The left sidebar contains a tree view with the following structure:

- Common Tasks
- Domain
 - server (Admin Server)
 - Clusters
 - Standalone Instances
 - Nodes
 - Applications
 - Lifecycle Modules
 - Monitoring Data
 - Resources
 - Concurrent Resources
 - Connectors
 - JDBC
 - JMS Resources
 - JNDI
 - JavaMail Sessions
 - Resource Adapter Configs
- Configurations
 - default-config
 - server-config
 - Admin Service
 - Connector Service
 - EJB Container
 - HTTP Service
 - JVM Settings
 - Java Message Service
 - Logger Settings
 - Monitoring
 - Network Config
 - ORB
 - Security
 - Realms**
 - Audit Modules
 - JACC Providers

The main content area is titled "New Realm" and contains the following configuration fields:

Configuration Name: server-config

Name: * meteocal-authentication-realm

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

Choose a realm class name from the drop-down list or specify a custom class

Properties specific to this Class

JAAS Context: *	jdbcRealm	Identifier for the login module to use for this realm
JNDI: *	jdbc/connectionToMeteoCalDB	JNDI name of the JDBC resource used by this realm
User Table: *	user_table	Name of the database table that contains the list of authorized users for this realm
User Name Column: *	username	Name of the column in the user table that contains the list of user names
Password Column: *	password	Name of the column in the user table that contains the user passwords
Group Table: *	user_table	Name of the database table that contains the list of groups for this realm
Group Table User Name Column:		Name of the column in the user group table that contains the list of groups for this realm
Group Name Column: *	groupName	Name of the column in the group table that contains the list of group names
Password Encryption Algorithm: *	SHA-256	This denotes the algorithm for encrypting the passwords in the database. It is a security risk to use weak algorithms.
Assign Groups:		Comma-separated list of group names

You should now be ready to deploy the provided war file and test our platform.

To deploy the application go under Application and choose “Deploy”:

The screenshot shows the GlassFish Server Open Source Edition web console. The top navigation bar includes 'Home' and 'About...' buttons. Below the navigation bar, the user is 'anonymous', the domain is 'meteocal-installation-test', and the server is 'localhost'. The main title is 'GlassFish™ Server Open Source Edition'. On the left, a 'Tree' view shows the navigation structure: Common Tasks, Domain (server (Admin Server)), Clusters, Standalone Instances, Nodes, Applications (selected), Lifecycle Modules, Monitoring Data, and Resources. The main content area is titled 'Applications' and contains the text 'Applications can be enterprise or web applications, or various kinds of modul'. Below this, there is a section 'Deployed Applications (1)' with a table. The table has columns 'Select' and 'Name'. The first row has a checkbox and the name 'meteocal-web-install-test'. Above the table are buttons for 'Deploy...', 'Undeploy', 'Enable', and 'Disable', along with a 'Filter:' dropdown.







Then upload the provided meteocal.war file and set the following data:

The screenshot shows the 'Deploy Applications or Modules' page in the GlassFish Server Open Source Edition web console. The top navigation bar is the same as the previous screenshot. The left 'Tree' view shows the navigation structure: Common Tasks, Domain (server (Admin Server)), Clusters, Standalone Instances, Nodes, Applications, Lifecycle Modules, Monitoring Data, Resources (expanded), and Configurations (expanded). The 'Resources' section is expanded, showing 'Concurrent Resources', 'Connectors', 'JDBC', 'JMS Resources', 'JNDI', 'JavaMail Sessions', and 'Resource Adapter Configs'. The 'Configurations' section is also expanded, showing 'default-config' and 'server-config'. The main content area is titled 'Deploy Applications or Modules' and contains the text 'Specify the location of the application or module to deploy. An application can be in a package'. Below this, there are two radio buttons for 'Location': 'Packed File to Be Uploaded to the Server' (selected) and 'Local Packaged File or Directory That Is Accessible from GlassFish'. The 'Packed File' option has a 'Choose File' button and the file name 'meteocal-web...ll-test.war'. The 'Local Packaged File' option has a text input field and a 'Browse' button. Below the 'Location' section, there is a 'Type:' dropdown menu set to 'Web Application'. The 'Context Root:' text input field contains 'meteocal-web-install-test' with a note 'Path relative to server's base URL.'. The 'Application Name:' text input field contains 'meteocal-web-install-test'. The 'Virtual Servers:' dropdown menu is set to 'server' with a note 'Associates an Internet domain name with a physical server.'. Below the 'Virtual Servers' section, there are several checkboxes: 'Status:' (checked, 'Enabled'), 'Implicit CDI' (checked, 'Enabled'), 'Precompile JSPs:' (unchecked), 'Run Verifier:' (unchecked), 'Force Redeploy:' (unchecked), 'Keep State:' (unchecked), and 'Deployment Order:' (text input field). Below the 'Deployment Order' section, there is a 'Libraries:' text input field and a 'Description:' text input field.

Then, on the applications page you should be able to Launch the application and use it successfully.

Applications

Applications can be enterprise or web applications, or various kinds of modules. Restart an application or module by clicking on the reload link, this action will apply only to the targets that the application or module is enabled on.

Deployed Applications (1)				
		 Deploy	 Undeploy	 Enable
		 Disable	Filter: <input type="text"/>	
Select	Name	Deployment Order	Enabled	Engines
<input type="checkbox"/>	meteoal-web-install-test	100		ejb, web
				Launch Redeploy Reload

This will bring you to a new page where there are two links, press the first one to enter.

Web Application Links

If the server or listener is not running, the link may not work. In this event, check the status of the server instance. After launching the web application, use the browser's Back button to return to this screen.

Application Name: meteocal-web-install-test

Links:

- [server] <http://Z3570k:8080/meteocal-web-install-test>
- [server] <https://Z3570k:8181/meteocal-web-install-test>

Then you should see the MeteoCal Index page and be able to access every functionality we offer.

Registration

Username *

Password *

Password Confirmation *

Signup

Login

Username *

Password *

Login

3. Using The Source Code

To open the source code provided in the meteocal.zip file, extract the zip file and, in Netbeans, choose “Open Project”, navigate to the extraction folder and select the project folder. Make sure to have “Open Required Projects” selected.

