System Installation Guide

Guide to a successful system installation on an open source application stack.

August 1st, 2017

Version 1.4.0.1

Contact: DIGIT-EUSURVEY-OSS@ec.europa.eu

Content

1. Overview

EUSurvey is the official online survey management tool of the European Commission. Its development was started in 2013 under the supervision of DIGIT (http://ec.europa.eu/dgs/informatics/index_en.htm) and is published as open source software under the terms of the EUPL public license on JOINUP at

https://joinup.ec.europa.eu/software/eusurvey/home. EUSurvey is a servlet based application and can be installed on any system that runs a JAVA servlet-container.

The system's development and reference installation runs Apache Tomcat as the servlet container and uses a MySQL database to store its information. The build process is assisted by Maven for resolving external dependencies.

This document describes the steps that are necessary to compile and install the open source version of EUSurvey. Even though the application can be installed on an arbitrary system running JAVA, the installation of the development environment will be presented on a Microsoft Windows 7 system representatively, for the sake of simplicity.

Except for Microsoft Windows, all tools used in this tutorial are available free of charge on the corresponding web sites.

Please notice that EUSurvey can be configured to run on a large number of different environments. In this case however, the installation of a different set of tools is necessary. The aim of this document is to guide the interested user through the process of installing a development environment and to deploy a working instance of the EUSurvey system, with as less effort as possible.

The experienced developer should feel free to use a compatible set of tools of his choice.

2. Prerequisites

To run the application from your own server being connected to the internet, a specific software architecture, composed of a servlet container and a supported database must be installed. The following table show an overview of the necessary software packages that should be installed to run (and compile) the EUSurvey application.

	Package	Version	Download from
1	Java SDK	8u121	http://www.oracle.com/technetwork/java/javase/downloads/index.html
2	Tomcat	8.0.15	http://tomcat.apache.org/download-80.cgi
3	MySQL	5.6.21	http://dev.mysql.com/downloads/mysql/
4	Spring	3.6.2	http://spring.io/tools/sts/all

Please notice that installing a software on your computer might require administration privileges. As the host system is usually shipped with an internet browser and the possibility to unpack zip-compressed files, these tools will not be mentioned explicitly.

Tools

The following tools and binaries need to be installed on the system to create and run the application:

Java SDK

Java is the programming language of the EUSurvey system. To run an application in JAVA, regardless what application it is, the JAVA runtime environment must be installed on your system. Given that we will create the application from its source-code, the Java Development Kit (JDK) is required.

Download and install the latest JDK 8 version for your system (jdk-8u121) from the Oracle web site:

http://www.oracle.com/technetwork/java/javase/downloads/index.html

Once you have installed it, please conduct the following steps to configure your system:

WARNING: for the user that already installed and used EUSurvey, you have to upgrade Java from 7 to 8, if you don't do that the application will fail!

Adjust system variables

To complete your installation of the JDK on your system, different system variables need to be adjusted to match your environment.

To do so, please open the System menu from the Control Panel of your system and select "Change Settings" from the section representing "Computer name, domain, and workgroup settings".
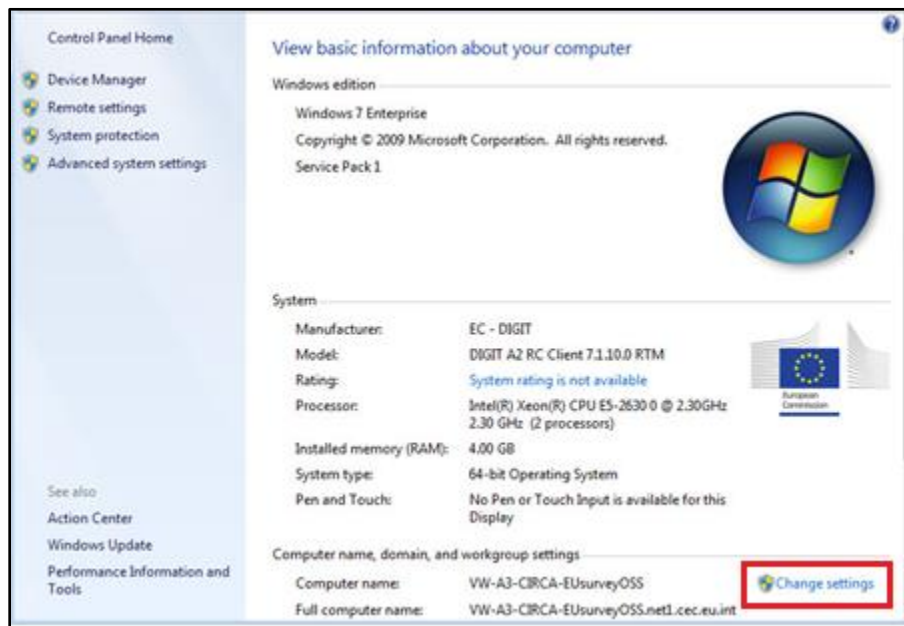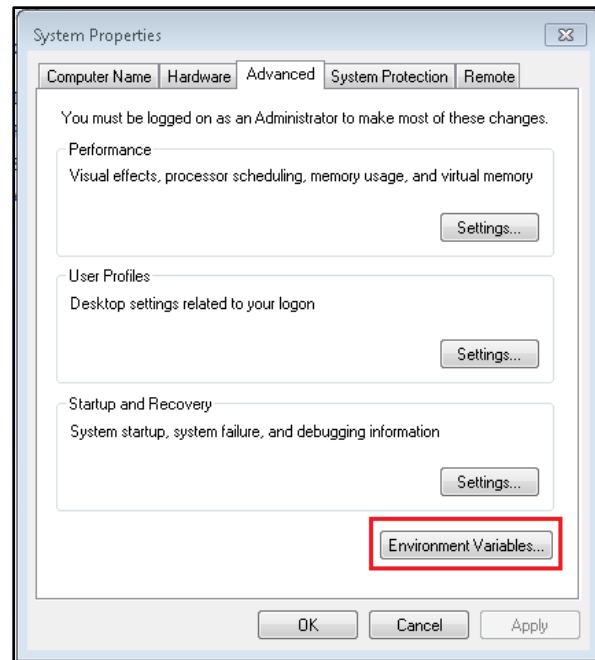

Figure 1 - Change system settings.
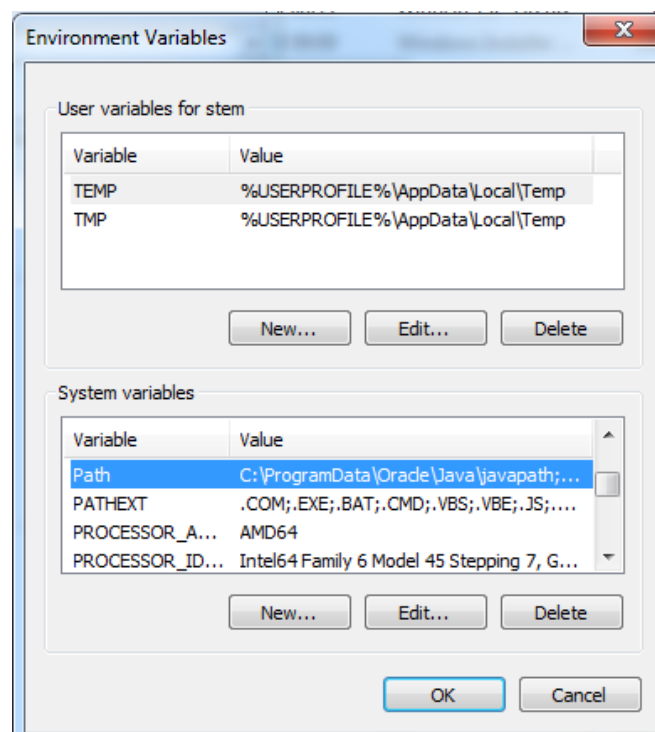
Figure 2 - Edit environment variables.

Figure 3 - Edit system variables.

JAVA_HOME

Edit or create a new variable named **JAVA_HOME** and assign it the path to the installation directory of your JDK installation. (e.g. c:\jdk)

PATH

Additionally, add the patch containing the Java binaries of your JDK installation to the variable named **PATH (**e.g. c:\jdk\bin)

Test your settings

To test your installation, please open a windows command prompt and type "java -version". Type in "cmd" in the search field of your Start-environment and execute "cmd.exe" from the result list.
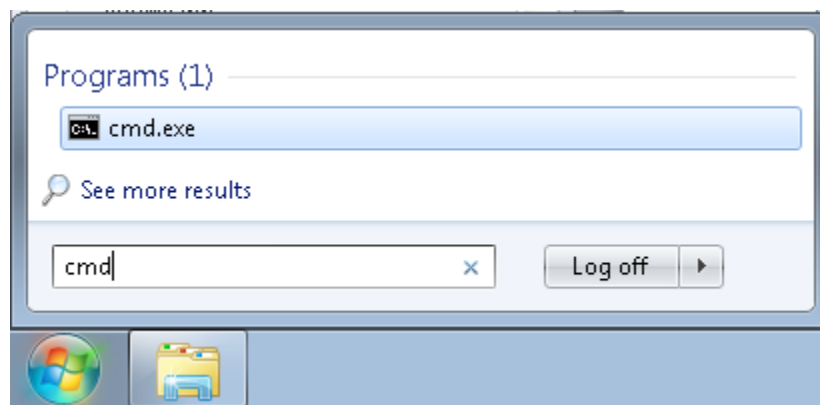

Figure 4 - Searching for the command line executable

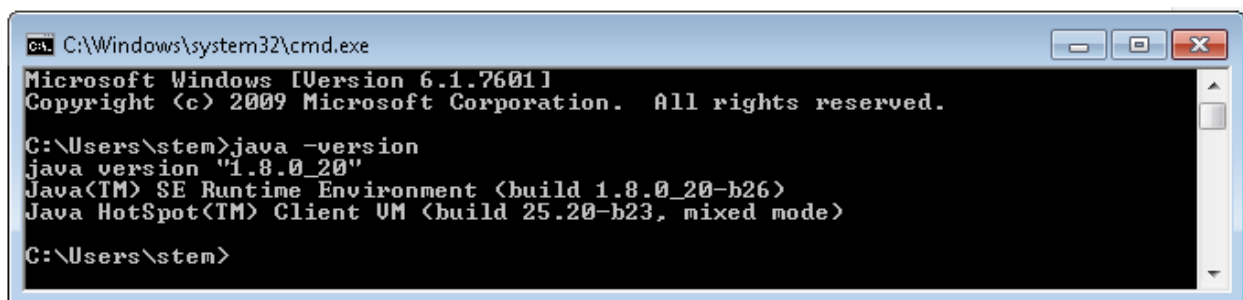On successful installation, java will return information about the installed version.

Figure 5 - Test installation of java executables

MySQL Database Server and Client

To install the MySQL database server, download the latest MySQL Community Server of version5.6 from the MySQL web site:

http://dev.mysql.com/downloads/mysql/

The Installation Guide is based on version 4.5.11.0 of the MySQL Database. It might be possible newer versions of the product are shipped with a slightly different installation wizard.

Hint

Please notice that the installation of the MySQL database requires the .NET framework 4.0 to be installed on your computer. If the wizard cannot find this package on your computer, the installation process will stop, showing you the message below. In this case, please browse to the indicated URL to download and install your copy of the Microsoft .NET Framework 4.5 binaries before proceeding.
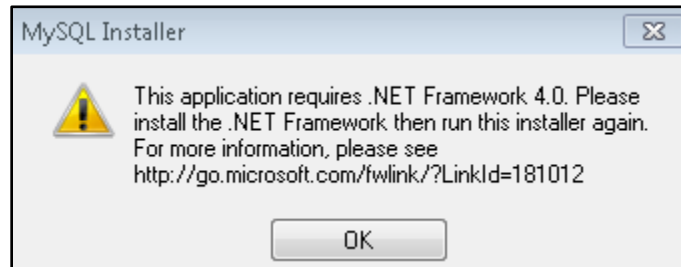

Figure 6 - Error message mentioning .NET to be required

From the Oracle web-page, please download the MySQL Community server. Choose the Windows (x86, 64 bit), MySQL Installer MSI that contains an offline-installation wizard, that will guide you through the installation process.

Figure 7 - Download MySQL from the Oracle web-page

Please make sure to download the full installation package and not the web-installer package, as depicted in the screenshot below.

| Windows (x86, 32-bit), MSI Installer | 5.6.21 | 1.4M | Download |

(mysql-installer-web-community-5.6.21.1.msi)   MD5: afcc307021e4f2cc3011427c6f4a27dd | Signature

| Windows (x86, 32-bit), MSI Installer | 5.6.21 | 287.0M | Download |

(mysql-installer-community-5.6.21.1.msi)   MD5: 62ee306399671b419b9924564a3d5496 | Signature

Figure 8 - Download full offline installer package.

Once you have launched the installation wizard, please select the "Custom" type of installation and adapt the installation- and data-path.

Figure 9 - Select "Custom" installation type.

When coming to "Feature Selection", make sure that "MySQL Workbench CE" is selected. This application represents an easy-to-use MySQL client application. Please notice that such an application

8

will be necessary at a later point of the installation process, to create a custom database schema for EUSurvey manually.

Hint

The installation of this application requires the Microsoft Visual C++ runtime libraries. These libraries are installed automatically by the wizard during the installation process, if not already existing on your system.
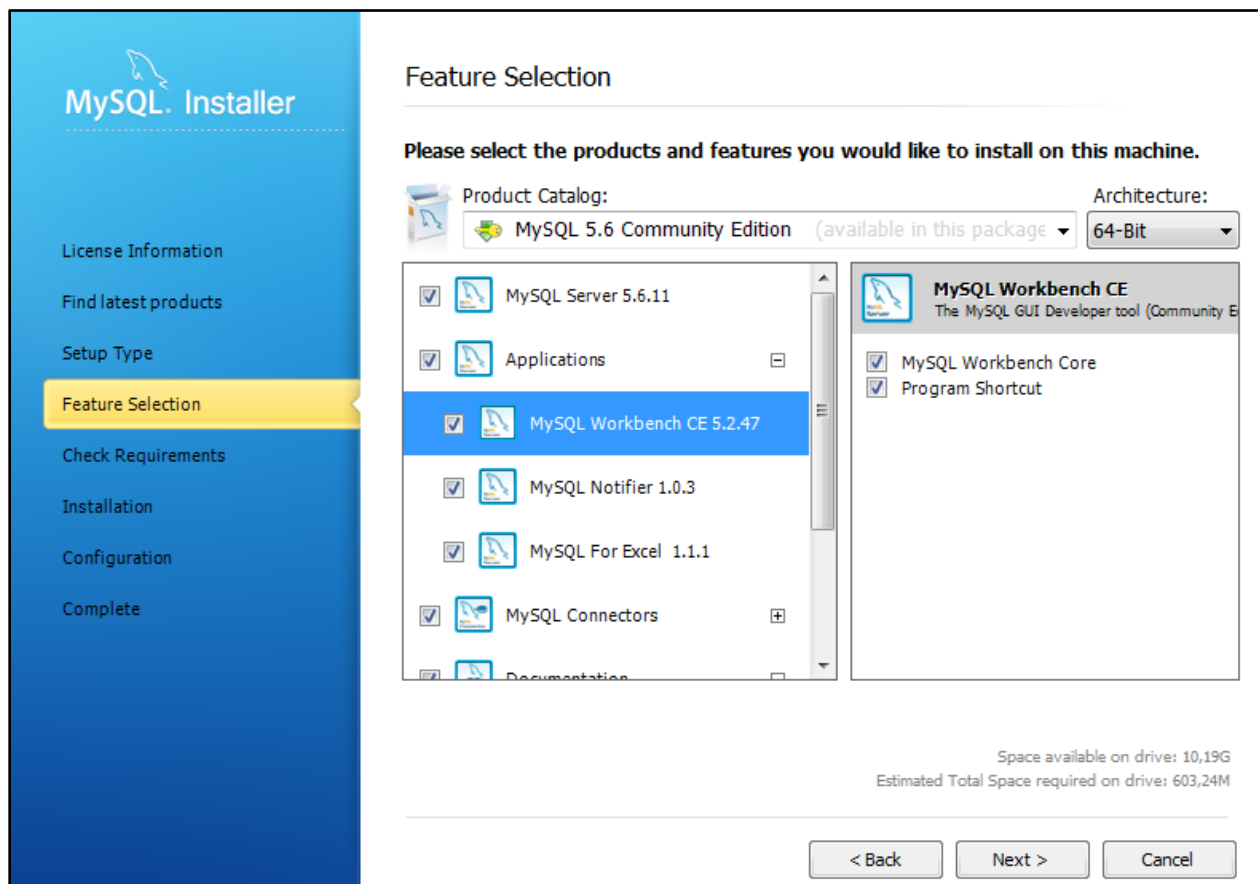

<div align="center">**Figure 10 - Select MySQL Workbench for installation.**</div>

Please feel free to unselect different other options, as they are not necessary for a successful installation of the EUSurvey system.

Once you have successfully installed the MySQL server and client on your computer, an initial configuration becomes necessary. On the second page of the configuration phase, please set the password of the MySQL root account.
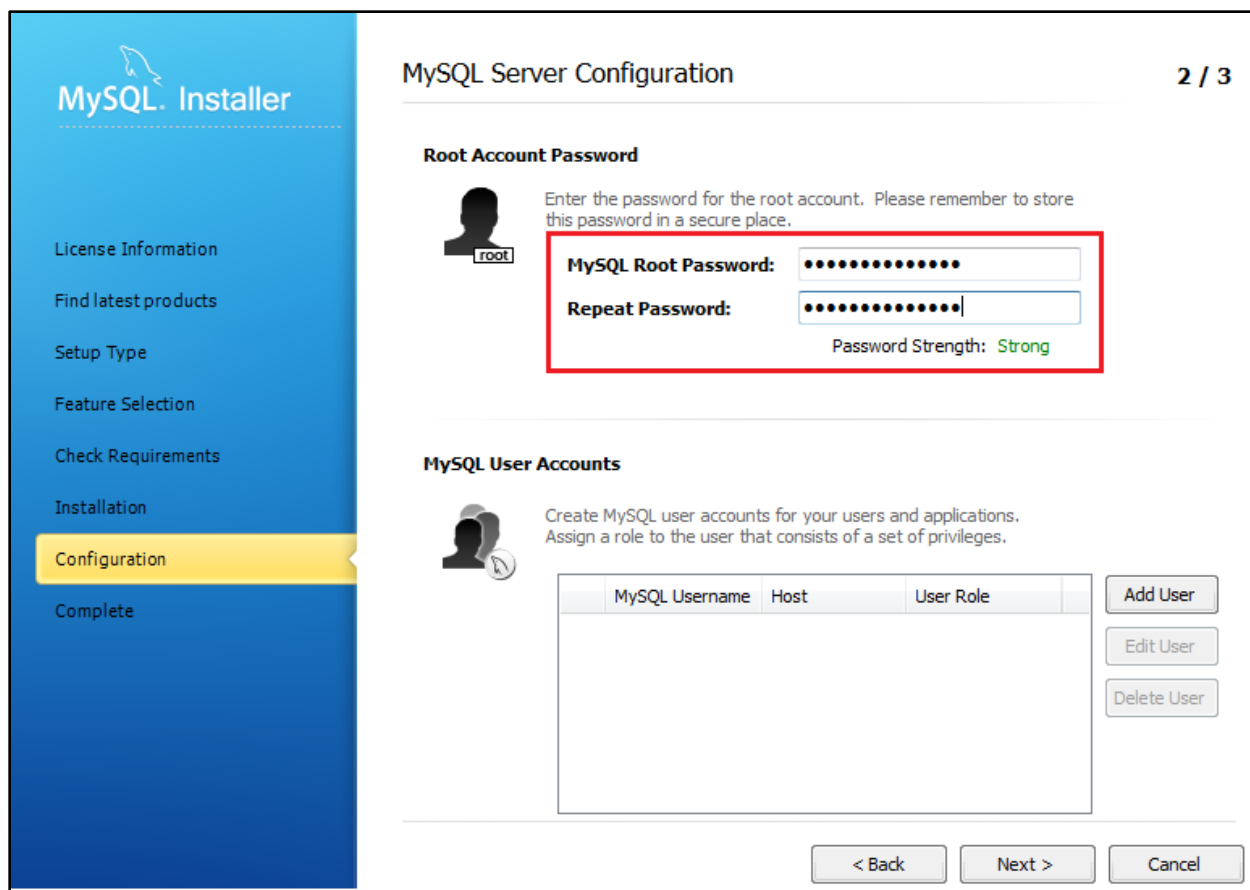
Figure 11 - Setting a new MySQL root-password.

Once you have done so, please follow the wizard until a successful installation is reported by the system.

Enabling Event-Scheduler

EUSurvey makes use of an advanced database functionality named "Event Scheduler". Unfortunately, this feature is not enabled by default, but has to be enabled before EUSurvey can make use of it.

To do so, please edit the configuration file of your MySQL server "my.ini" or "my.cnf", usually located in the server's sub-folder under the "ProgramData" folder of your system disk.

Troubleshoot

If you don't find the ProgramData or the my.ini file, please change your explorer settings to display hidden and system folder/files.
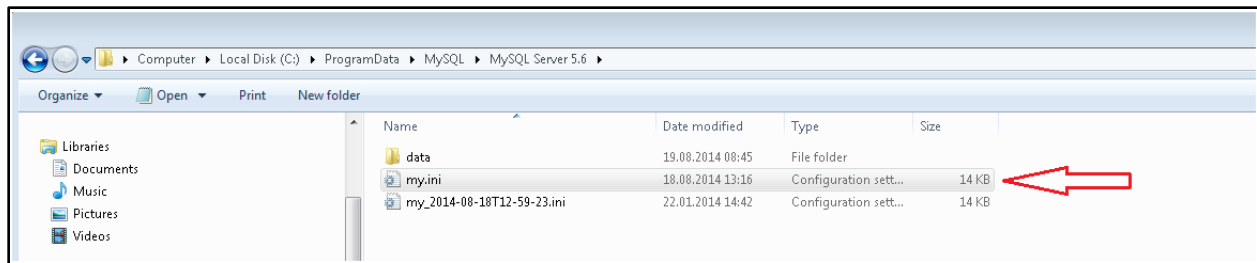
Figure 12 - Edit database configuration file from MySQL installation directory.

In this file, please scroll down to the [mysqld] section of the file and add the following line to it:

"event-scheduler=ON"

Example

Figure 13 - Add event-scheduler switch to MySQL configuration.

To take these settings into account the database (that has already been started right after installation and is running as a background service) needs to be restarted.

Therefore, please open the view on system Services and RESTART the system service labelled "MySQL56" as described in the Knowledge section below.
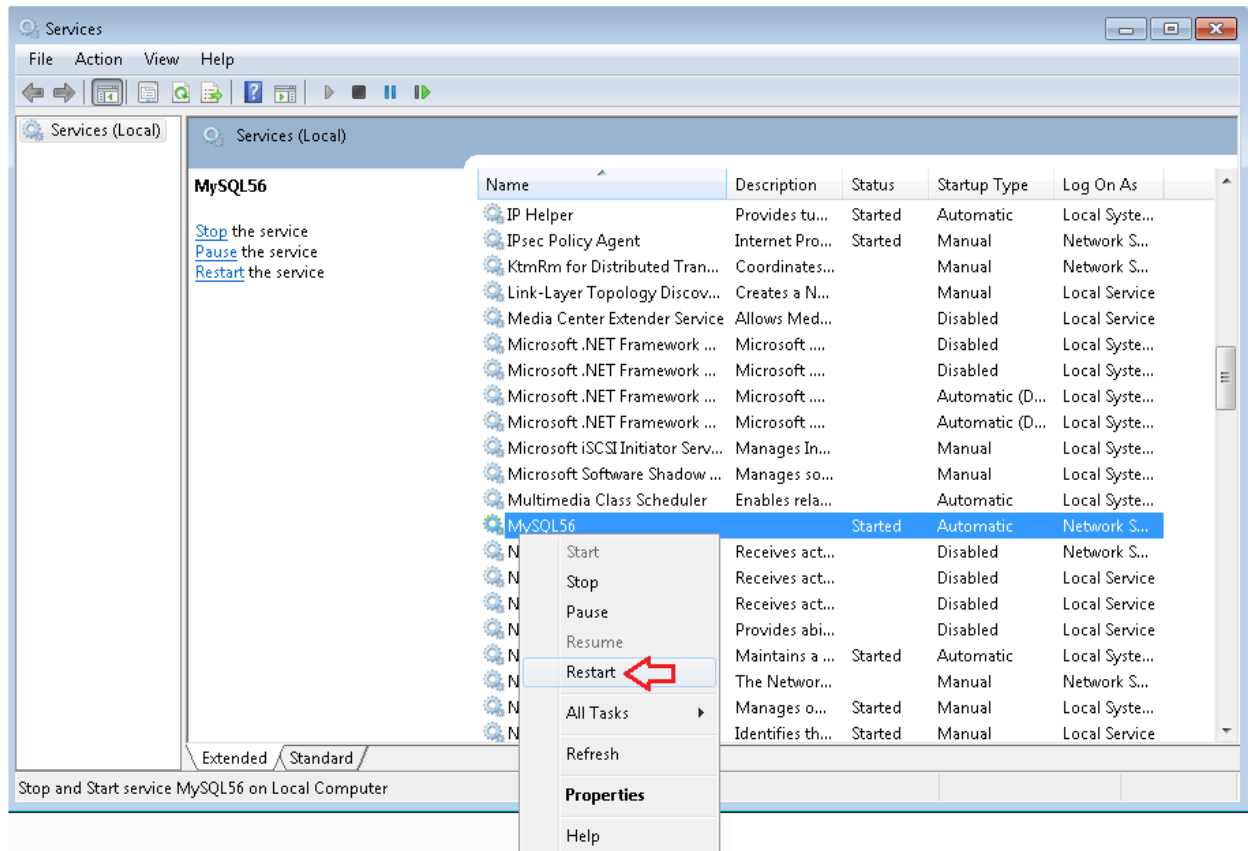
Figure 14 - Restart the MySQL service after configuration.

Changing SQL modes

Changing the SQL modes is only necessary, if you are using a MySQL version 5.7.5 or higher. In version 5.7.5, the ONLY_FULL_GROUP_BY mode has been enabled by default in MySQL; it has to be disabled by removing it from the sql_mode system variable:

1. Go to MySQL Workbench and execute the following query: `SELECT @@sql_mode`
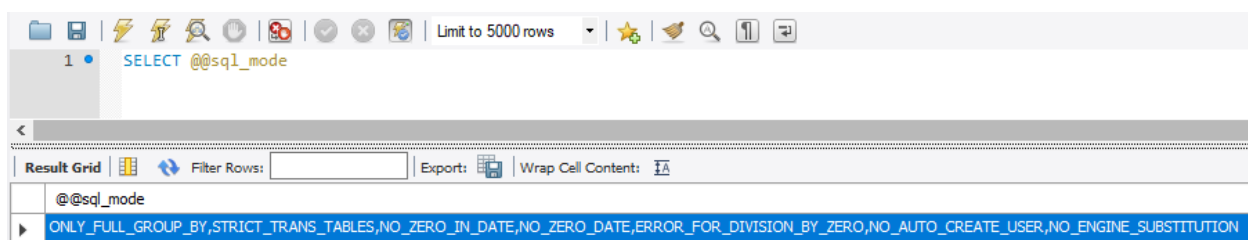   This will return a list of currently configured SQL modes:

Figure 15 - List of currently set SQL modes

2. Open the file "my.ini" or "my.cnf" (cf. section Enabling Event-Scheduler) and set the sql_mode variable in the section [mysqld] as follows:
   sql_mode="<SQL_MODES>"

12

where <SQL_MODES> is the listing resulted in step 1 without ONLY_FULL_GROUP_BY.

```
[mysqld]
event-scheduler=ON
sql_mode="STRICT_TRANS_TABLES,NO_ZERO_IN_DATE,NO_ZERO_DATE,ERROR_FOR_DIVISION_BY_ZERO,NO_AUTO_CREATE_USER,NO_ENGINE_SUBSTITUTION"
```

Figure 16 - Configuration of system variable sql_mode

The database needs to be restarted (cf. section Enabling Event-Scheduler) to enable this change.

Once you have successfully performed all above mentioned steps you are ready to build EUSurvey from its sources and to deploy the application to the servlet container (e.g. Apache Tomcat).

Apache Tomcat Servlet Container

As a Java web application, EUSurvey requires an application server (more precisely, a Servlet Container) to run the application. Such a servlet container is offered from different manufacturers and can be used interchangeably. In the context of this installation guide, the deployment on an Apache Tomcat servlet container will be described exemplarily for this type of application.

Please download and install the latest Apache Tomcat version from the Apache web site located at:

http://tomcat.apache.org/download-80.cgi

Make sure to download the 32-bit/64bit Windows Service Installer from the download page. It contains an installation wizard that will guide you through the installation process.

From the installation wizard, please select the custom type of installation and set the "Service Startup" as shown in the screenshot below.
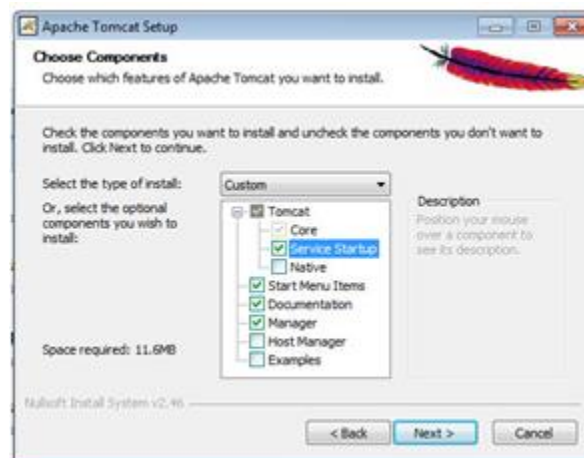

Figure 17 - Select application to run as a service

During the installation process, please specify the folder where you have installed your Java Runtime Environment (JRE), as done in the previous step.
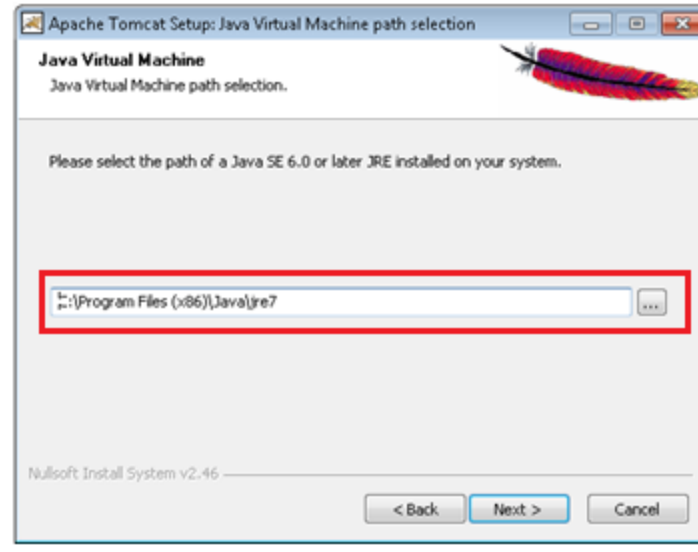
13

Figure 18 - Specify JRE location.

After successful installation, the Servlet Container that runs as a System Service needs to be started. This step is mandatory for the web-application to be correctly deployed.

To do so, please open the view on system services and select "Start" from the respective service entry labelled "Apache Tomcat 7.0 Tomcat 7" from your item's context menu.

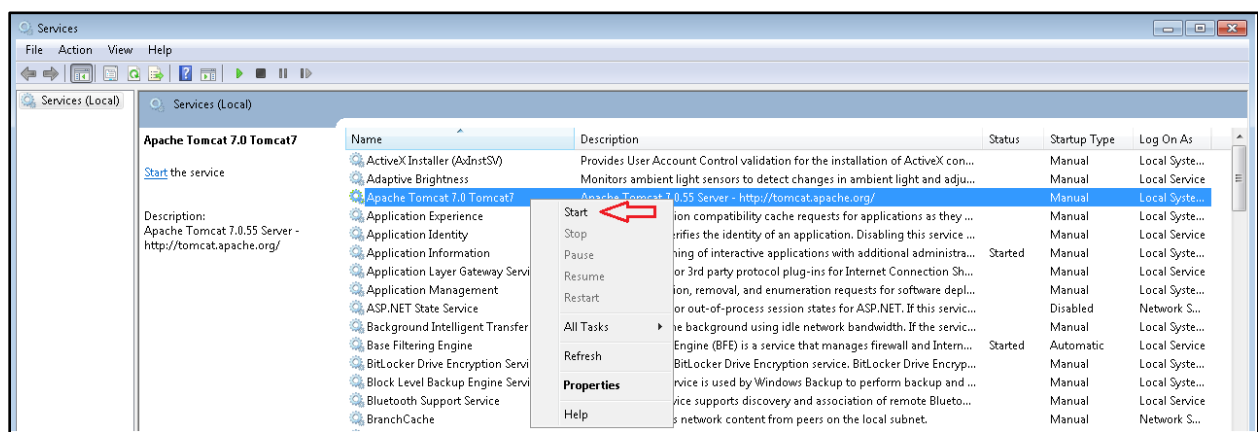Please read the section on how to "Control System Services", if you are unsure on how to do this.

Figure 19 - Start Tomcat from the System Services view.

Once Apache Tomcat has been started successfully, please browse to the following URL.

http://localhost:8080/

14

Once your Servlet Container has been installed and started successfully, your browser will show the following (or similar) page:
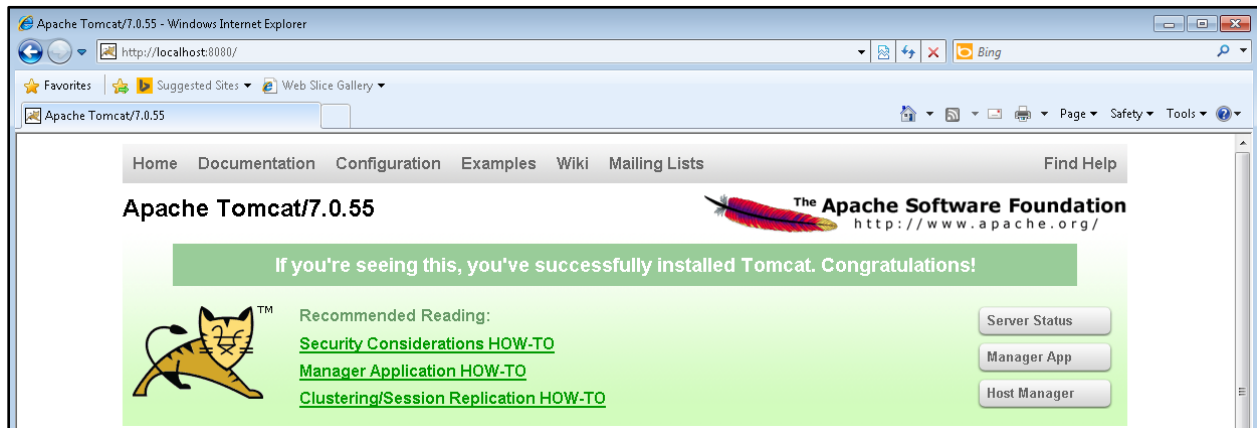

Figure 20 - Apache Tomcat welcome screen.

Spring Tool Suite

EUSurvey was built on top of a software framework named Spring MVC. To start your work on EUSurvey, we propose to use the Sprint Tool Suite as the primary IDE.

The Spring Tool Suite (STS) is a Java IDE based on the popular Java IDE "Eclipse" and has the binaries of the Spring framework built-in, as well as different other tools that facilitate development on the Spring MVC framework.

Download and extract the latest Spring Tool Suite version from the Spring web-site located at:

http://spring.io/tools/sts/all

Please make sure the package you install match your installation of the JDK (in terms of being compiled for 32 or 64bit architectures).
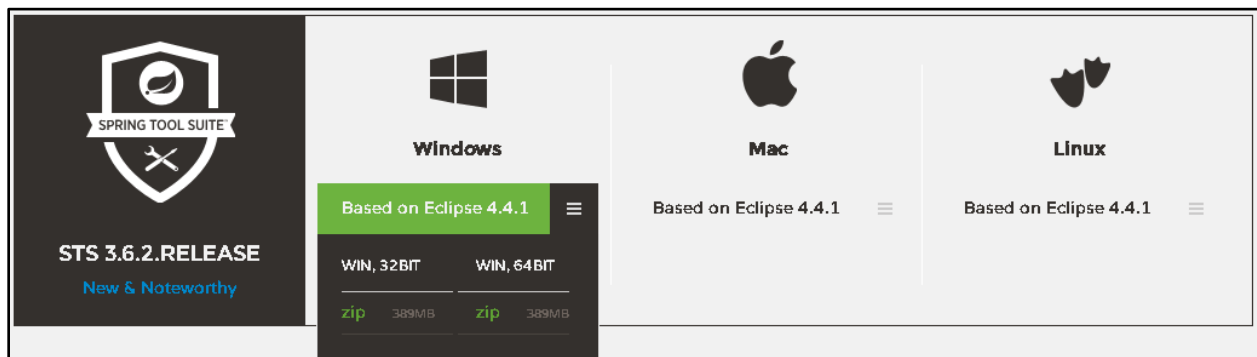
Figure 21 - Select 32 or 64bit release from the STS-download-page, depending on what JDK binaries have been installed.

15

Once the Sprint Tool Suite has been extracted to a local directory, the IDE can be started by executing "sts.exe" from the root-directory of the software package.

Troubleshoot

In case an error is telling you "**Failed to load JNI shared library"**, the Sprint Tool Suite you have downloaded does not match your installation of your JDK (in terms of being compiled for 32 or 64bit system).
In this case, please download the package matching your JDK installation.

As soon as above mentioned prerequisites are fulfilled, please proceed to the creation of the new EUSurvey database and to the deployment of the application from the compiled sources.

Maven

To avoid any problem with the compilation from any IDE (sts,eclipse,…) we have to install the maven software in order to create the war file.

Download and extract the Maven 3.2.3 (minimum required) from this link
http://maven.apache.org/download.cgi# and choose the Binary file

Extract the zip file to a folder

Adjust system variables

To complete your installation of the maven on your system, different system variables need to be adjusted to match your environment.

To do so, please open the System menu from the Control Panel of your system and select "Change Settings" from the section representing "Computer name, domain, and workgroup settings".
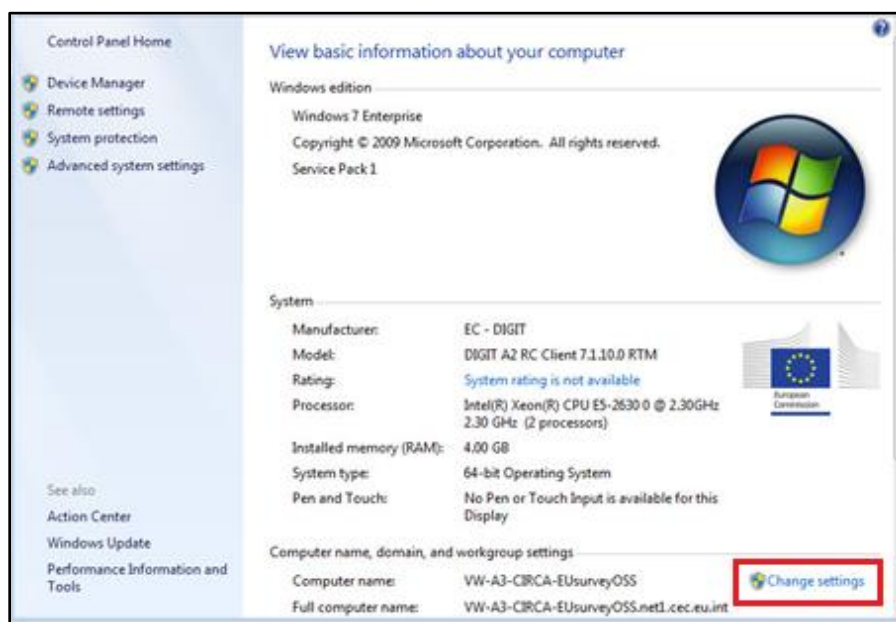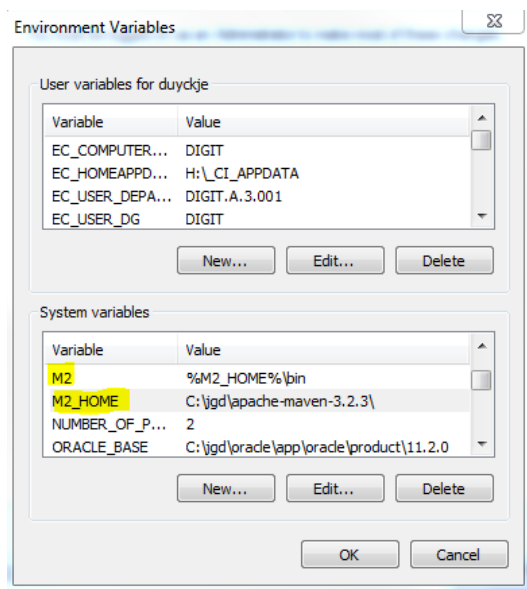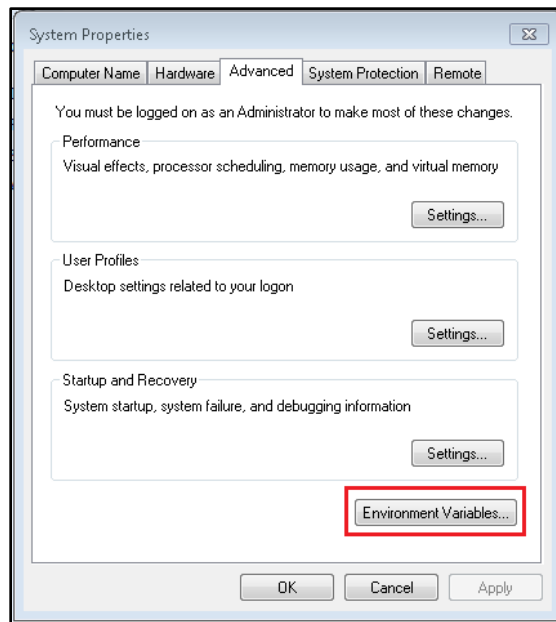

Figure 22 - Change system settings.

16

M2 and M2_HOME variables

Edit or create a new variable named **M2_HOME** and assign it the path to the installation directory of your maven installation.

Edit or create a new variable named **M2** and assign it the value %M2_HOME%\bin

PATH variable

Edit the Path variable by adding the %M2% entry

To ensure the proper installation of the Maven tools, open a command prompt windows and type mvn – version, you should have this kind of value returned

Microsoft Translator Data

If you want to use an automatic translation tool that is partially free* (see on the website the limitation of the free version), please follow those instructions

Register to the service

Go to the url https://datamarket.azure.com/dataset/bing/microsofttranslator

Please follow the instructions given by the website

But in summary you need first to create an account.

Search for the Translator application

and sign up for the version that you need (first option is free 2.000.000 character translated / month)

After Sign-Up you need to register the application, to do that from at the end of the page you have the Register your application below the Develop section

Enter the data that you need

You have to remember the Client ID value and the Client Secret that must be set in the spring.properties file (see Configure the application)

Knowledge

To be able to work on an EUSurvey development environment, the following advanced system knowledge is necessary:

- Modifying the state of existing System Services.

Control System Services

At different moments of the installation, you will have to start/stop/restart background tasks of your system, called Services.

In Windows systems, Services are controlled from a specific view named "Services" that is accessible from the Control Panel of your system or right from the Start Menu of your system.

To open this view, you can type "Services" into the input field in the start menu and activate the respective element.
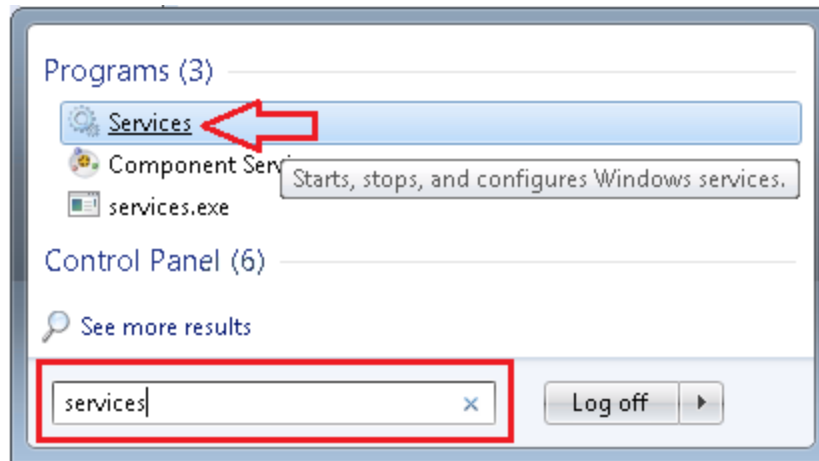
Figure 23 – Show System Services.

To modify a Service's stage, select an entry and click the right mouse button to open the context menu of the respective Service.

Then, please select "Start", "Stop" or "Restart" to change the Service's state.
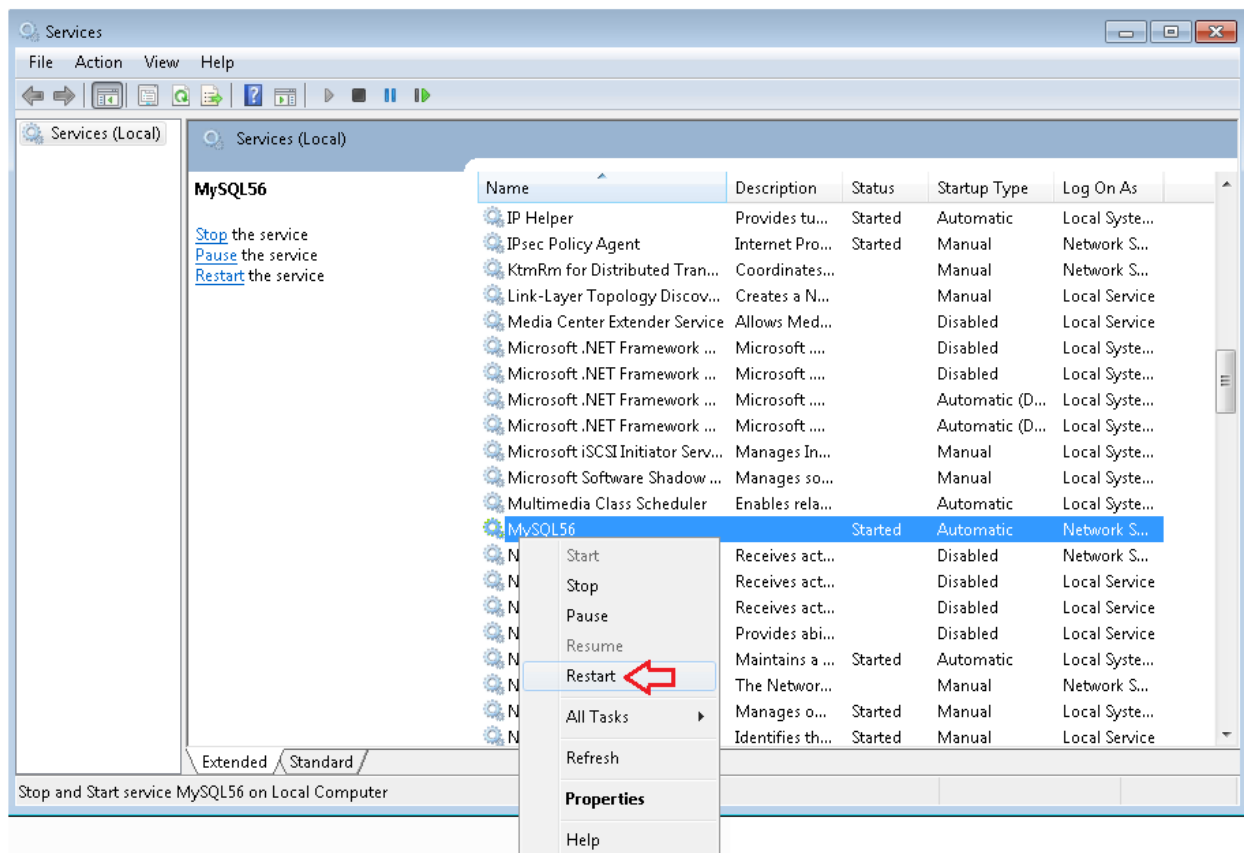
Figure 24- Changing a service's state.

Warning

Please make sure not to unintentionally stop services that are not described in this document, given that this may affect the stability of your system.

3. Initialize the Database

After having installed the necessary software packages, a new database must be created and configured. This will require the following 3 steps to be conducted:

1. Creation of a new database schema for EUSurvey
2. Creation of a new database user to be used with EUSurvey
3. Customizing the database server.

Create a new schema

To create a new schema, open the MySQL Workbench and connect yourself to the database server you have installed in a previous step selecting "Database -> Connect to Database…" from the application's menu.

Use the root user and the password you have specified during the installation.

Once connected to the database server, select "Create a new schema in the connected server" to create a new database for EUSurvey by clicking the respective icon from the toolbar.

A new page will be shown, offering the possibility to configure your new schema. Please call your new schema "eusurvey" and select "utf8- default collation" as collation of choice.

Figure 25 - Name the new database and select a collation.

Once you have done so, please click "Apply" to create your new schema. On success, a new schema will appear in the object browser.
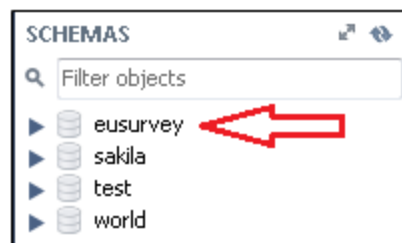
Figure 26 - New schema shown in object browser.

Create a new DB user

Once you have successfully created a new DB to save the elements created by EUSurvey, a new database user will have to be created, that can be used by the application to read and write into it.

To do so, please select "Users and Privileges" from the "Management" menu section of your Workbench and click the button labelled "Add Account", located at the bottom of the screen.
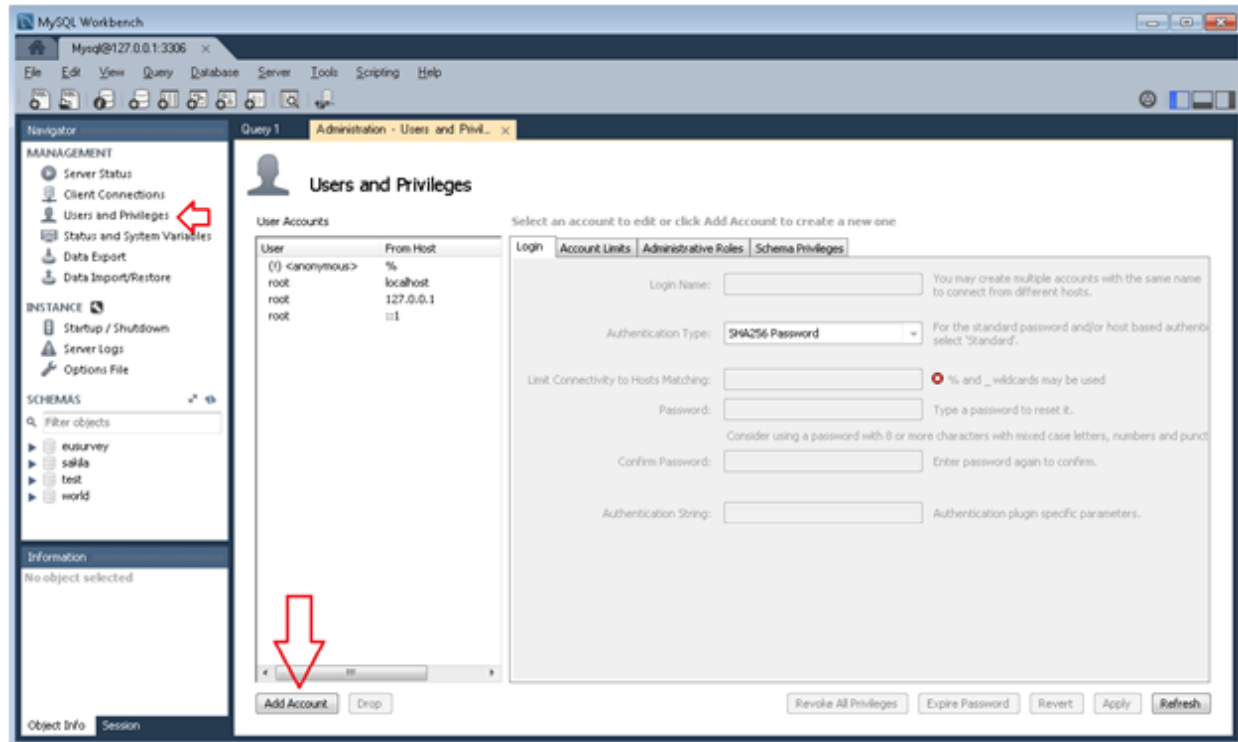
If you are asked to re-enter the password of user "root", please do so.

Once you have clicked "Add Account", the system will ask you to give the new user a name and to assign him respective privileges to perform specific tasks on your newly created database schema.

At first, please name your new user "eusurveyuser" on the "Login" tab. Then, choose and confirm a new password for this new user.

Figure 28 - Specifying user credentials of the new database user.

Once you have done so, change to the "Schema Privileges" tab and click "Add Entry…" to select a schema you want the new user to be privileged to perform some actions on.

Figure 29 - Select database schema for privileged access.

In the modal dialog that appears, select "Selected schema:" and highlight the name of the schema you created in a previous step. Then click "OK" to confirm your selection.
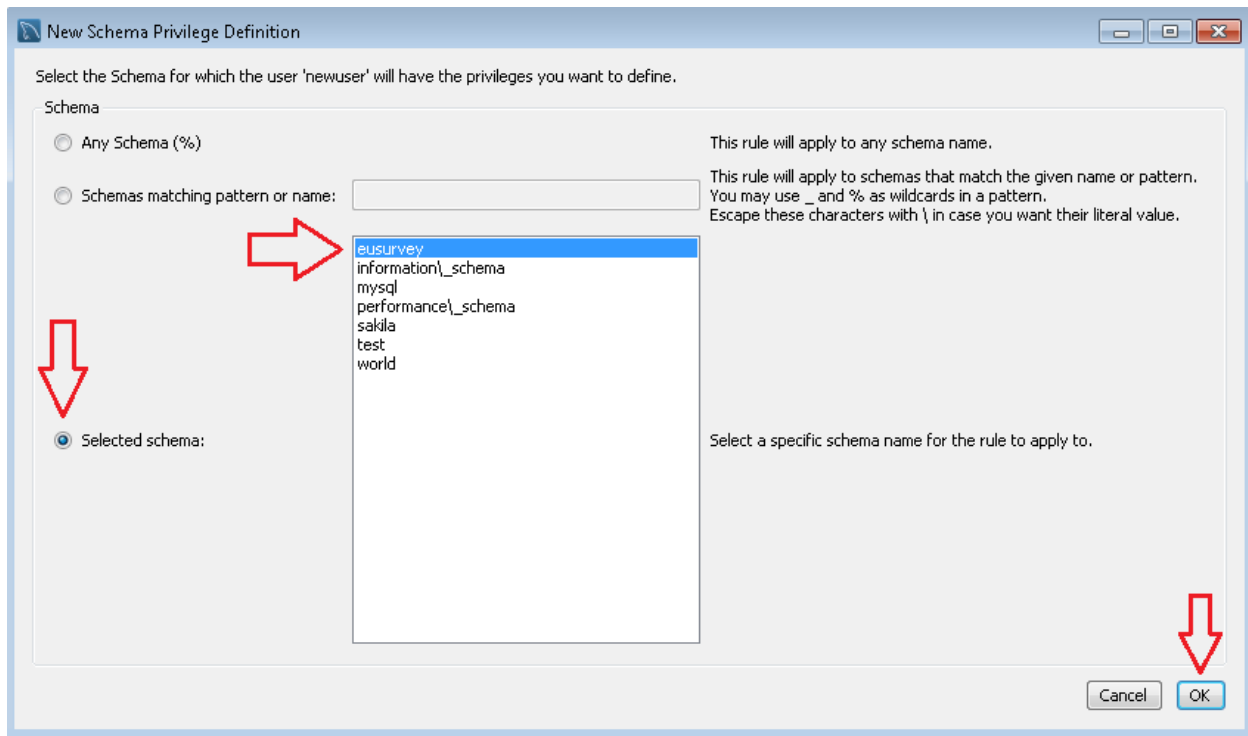
Figure 30 - Select schema from list.

Make sure that the name of the schema is highlighted correctly when it is selected. Otherwise, the application will just not take the selection into account and will return without showing any error but without having any schema selected, neither.

Once you have done so, you will be asked to specify the privileges to be assigned to the current user for the selected schema.

From the tab labelled "Administrative Roles", please set the "EVENT" privilege for this user.
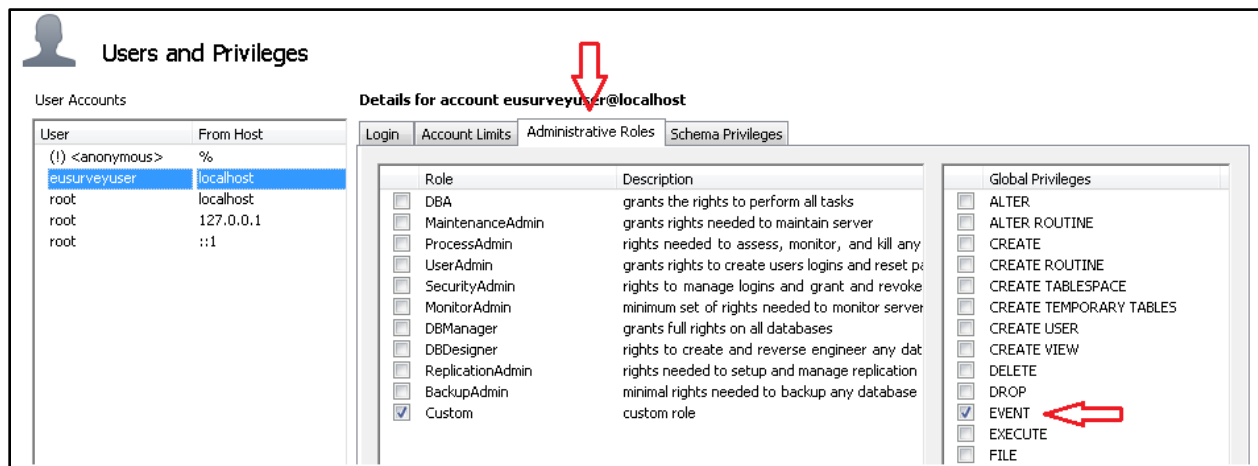
Figure 31 - Grant EVENT administrative privilege.

Then, from the tab labelled "Schema Privilege", click "Select ALL" to assign all available privileges to the new user you are about to create.

Finally, click "Apply" to create your new database user.
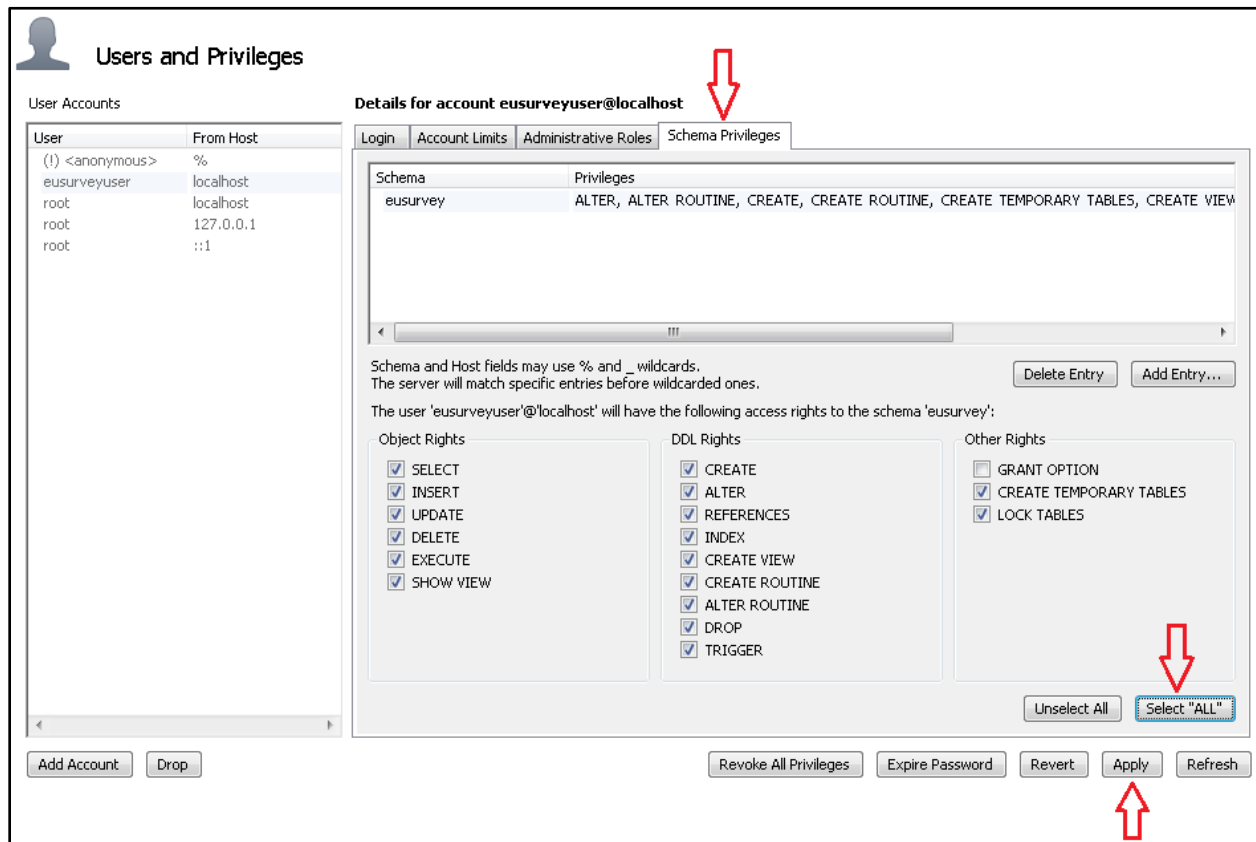
Figure 32 - Grant full Schema Privileges.

4. Build the application

A web application is usually deployed by loading a so-called WAR file ("Web Archive") into a respective Servlet Container (or Application Server). Such a file contains already compiled Java classes as well as human readable configuration files and more.

The next section will explain how to set-up a development environment and how to create an EUSurvey WAR file from its sources. The advanced reader who is not interested in building-up a whole development environment might be interested in the EUSurvey Deployment Guide that explains the manual configuration of an existing WAR file to be deployed on a working environment.

To build the application from its sources, the following steps will have to be performed:

1. Download the EUSurvey sources from JOINUP webpage.
2. Load the sources into a new Java project using the Sprint Tool Suite.
3. Configure the application to match your environment.

27

4. Export the WAR archive from the IDE.
5. Deploy the application on your Servlet Container.

The result of these steps will be a running EUSurvey application on your system environment.

Get the sources

Please get the EUSurvey source package as a zip archive from the location mentioned below and extract the content of the archive to a folder of your choice:

https://joinup.ec.europa.eu/software/eusurvey

Create a new Project

Once you have extracted the EUSurvey source code to your hard disk, load it into your IDE for configuration (and modification).

To do so, start the Spring Tool Suite you have installed in a previous step.

At start-up, you are asked to select a workspace. A workspace is a specific folder the system will save all project relevant data to. If you are unsure about what a workspace could be good for, just stay with the default.

Click "OK" to proceed with the program launch.
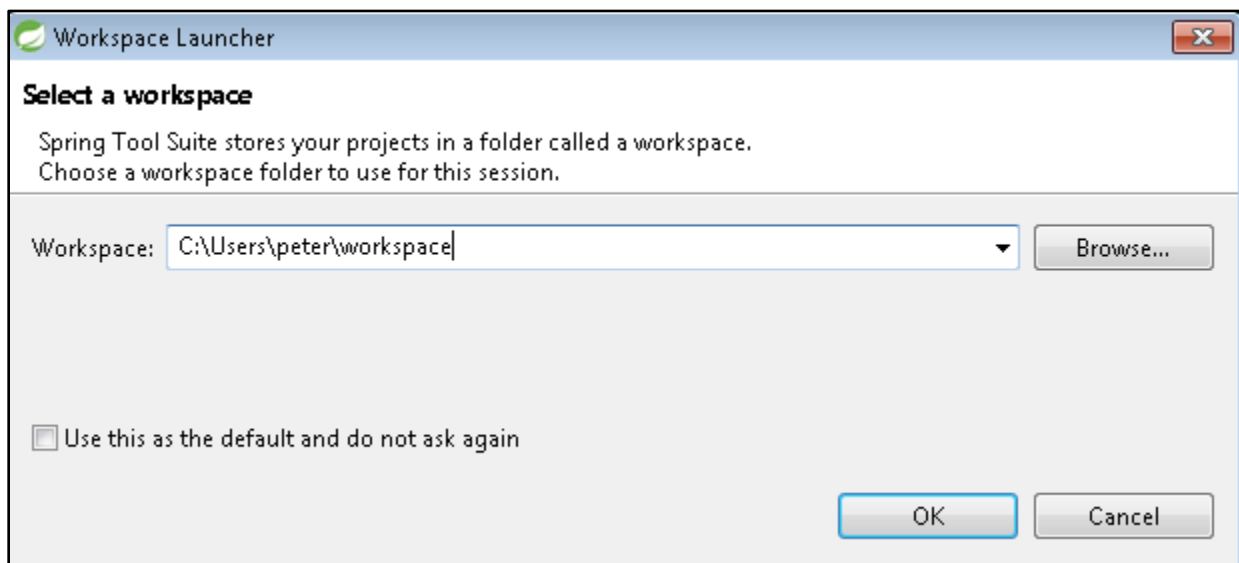
To create a new Java project from the sources, select "File->New-> Java Project" from the application menu.

In the dialog, use "eusurvey" as the new project's name and uncheck the "use default location" checkbox.

Then, click the button labelled "Browse…" to specify the folder you extracted the EUSurvey sources to.
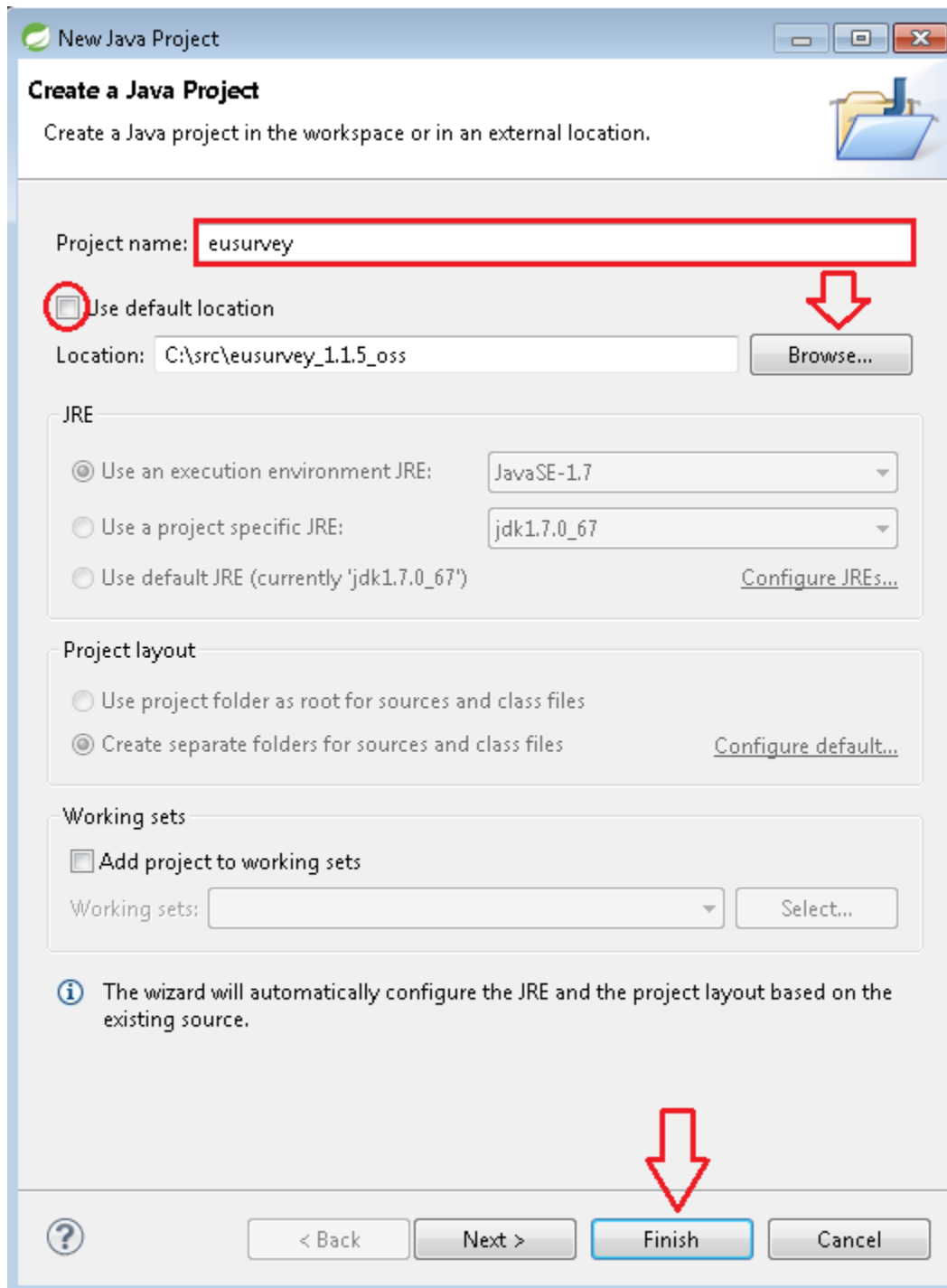
Figure 34 - Setting-up the project to import.

Then, click finish to create the project.

Once you have imported your new project successfully, the IDE will start setting-up the project environment. Most important, the integrated built-system named "Maven" will now start downloading dependencies during the first build which can take quite some time.

Please proceed to the next step "Configure the application", if the build-process succeeds without any errors. Otherwise, please read below.

Troubleshoot

In case your computer is located behind a network proxy and you have never used Maven before, you might run into trouble, given that Maven requires an internet connection to download missing packages from the internet. In this case, Maven needs to be configured to use correct proxy settings to access the internet. This is done by editing the Maven configuration file manually. The Maven built-system stores its settings in a file named "settings.xml", that is usually located in the folder named ".m2" in every user's home directory.
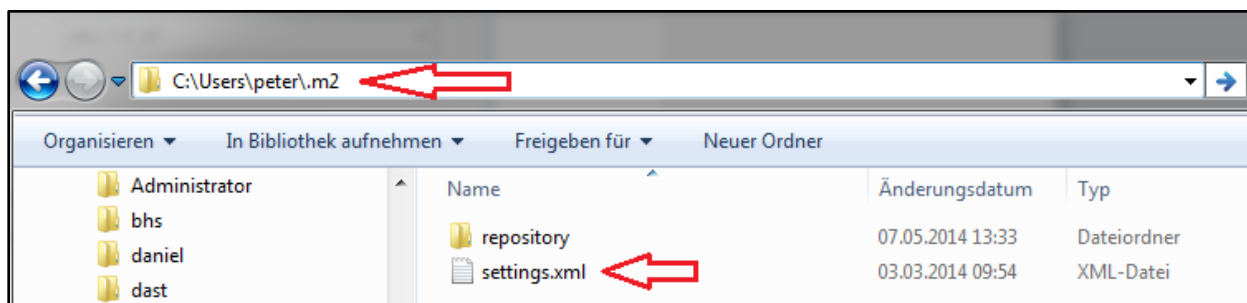
Figure 35 - Browse to the Maven configuration directory.

Editing this file, please add or adjust the section named "proxies" and enter valid proxy settings as depicted in the screenshot below

Example

```xml
<?xml version="1.0" encoding="UTF-8"?>
<settings xsi:schemaLocation="http://maven.apache.org/SETTINGS/1.0.0 http://maven.apache.org/xsd/settings-1.0.0.xsd"
          xmlns="http://maven.apache.org/SETTINGS/1.0.0"
          xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
    <proxies>
        <proxy>
            <active>true</active>
            <host>proxy.myhost.de</host>
            <port>8080</port>
            <nonProxyHosts>*.myhost.de|localhost</nonProxyHosts>
        </proxy>
    </proxies>
    <mirrors>
        <mirror>
```

Figure 36 - Add proxy settings to Maven configuration.

Once you have adjusted these settings, restart the package download for dependent libraries by selecting "Maven->Update Project…" from your project's context menu.

Please wait until the system has correctly downloaded the missing libraries before proceeding.
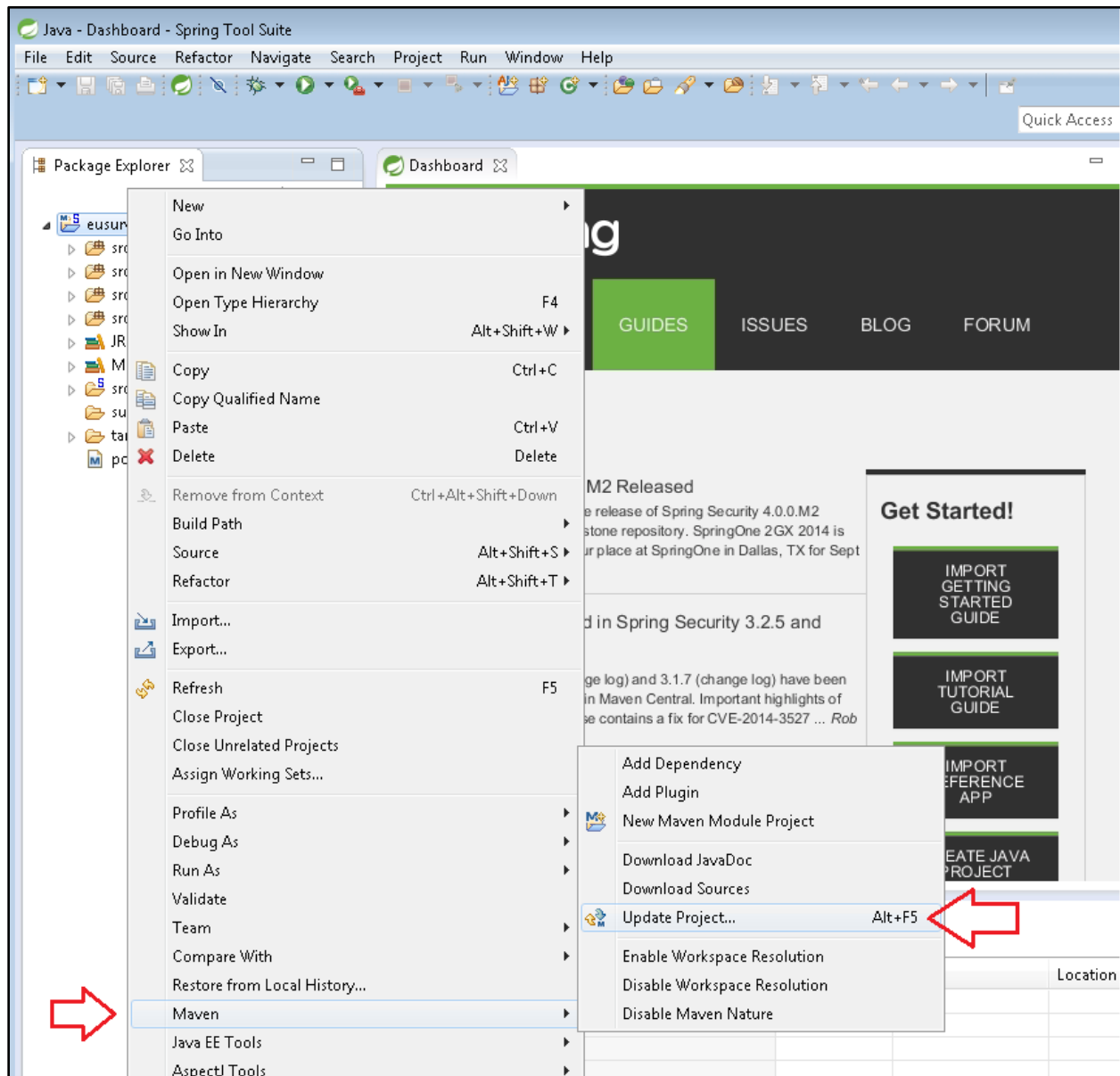
Figure 37 - Update a Maven project from project's context menu.

Hint

Just in case this does not solve the error, it might be necessary to rebuild the project. To do so, please make sure that "Build Automatically" is selected in the Project menu of the application and click "Project ->Clean…" to clean and rebuild your project.
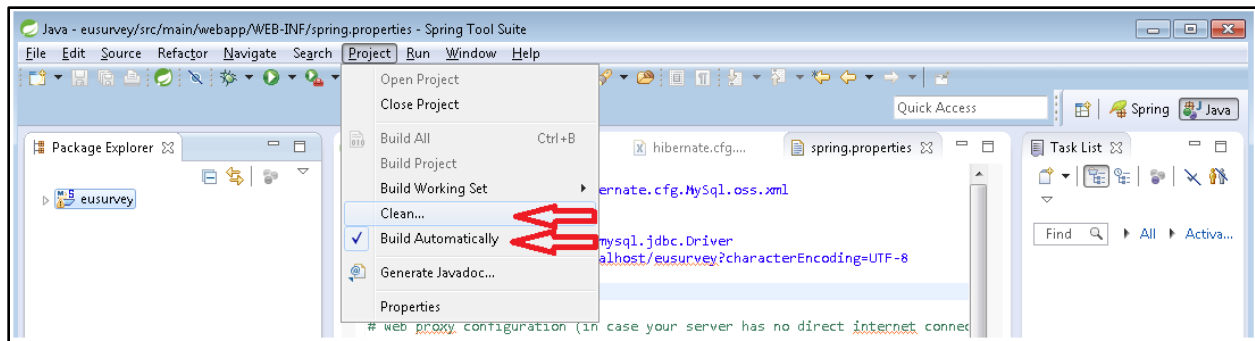
Figure 38 - Clean and rebuilt a Java project.

Configure the application

One server only

This is like the previous release of EUSurvey; the application runs on one server (user interface, background tasks, statistics, etc.)

Two servers (Main and Worker server)

This is a new feature, where the **main server** will execute almost all tasks (user interface, handling of HTTP sessions, etc.) while the **worker server** instance will serve to execute CPU- and memory-consuming tasks like exports, calculations of statistics, survey archiving and restoring, etc.

The settings of the application are still located on the spring.properties file, but now you will find two different spring.properties files. Both of them are located under the src/main/config. In this folder you will find two sub-folders "**main**" and "**worker**" that contain the adequate configuration file.

To configure the application to match your system environment, open the file named "spring.properties" from the same directory and configure the application to match your environment settings. This includes the following properties:

- Database settings (use the settings for the MYSQL user you configured earlier)
- Application server settings (Optional)
- Proxy settings (Optional, needed if your network is behind a proxy sever)
- System folder settings ((Optional)
- SMTP server configuration (Optional, needed if you want to send out invitations).
- Worker server configurations

Below you will find a short overview of all the possible settings in the spring.properties files:

Important: Depending on the selected server mode (main or both servers), you will have to update the corresponding spring.properties file (two files if you use the worker mode).

SMTP settings

Specify a working SMTP configuration to enable self-registration of new users.

32

- smtp.server - The configure SMTP server used
- smtp.port - The respective port the SMTP server is running on
- smtp.sender - The email address used by the application for sending email from

Directory settings

Specify directories to be used by the application. Defaults are valid for installations on Windows system only. Please adjust these settings if running the application on a Unix environment.

- export.fileDir - Directory used to save uploaded and system generated files (e.g. uploaded files and results of web service tasks).
- export.tempFileDir - Directory used by the system to save temporary data (e.g. where PDFs and other exports are created)

Proxy configuration settings

Specify how the application will connect to the internet, if you are running the application behind a web-proxy without direct Internet connection.

- proxy.host - The host running your web-proxy
- proxy.port - The port running the proxy
- proxy.user - The privileged user being allowed to pass the proxy
- proxy.password - Above mentioned user's password
- proxy.nonProxyHosts- If you need to bypass some address such as localhost to avoid error

Server settings

Global configuration of the application:

- server.prefix - Server prefix used for absolute links (e.g. for loopback calls). Port settings must match the settings of your servlet container (default is "http://localhost:8080/eusurvey", if unset)
- pdfserver.prefix - Server prefix of the local server instance that will provide survey content for being translated to PDF. Improves performance when a reverse proxy mapping is used. Should be set to the same value as server.prefix, otherwise

The following settings are optional:

Resource settings

- export.xsllink - Location of the style-sheet used to visualize translations in XML format (URL)
- export.poolsize - Number of instances in the three pools use to perform asynchronous operations (exports, PDFs, web services)

Connection pooling (c3p0)

Configuration of the connection pooling system for Hibernate is best described at
http://www.mchange.com/projects/c3p0/

Special settings

Settings that are useful in special situations only:

- **stresstest.createdata** - Setting this to 1 creates a lot of dummy data usually used for stress-testing an environment
- **webservice.maxrequestsperday** - Limits the number of web-service calls per user to that many
- **app.server.env** - Creates a banner in the upper left corner used on dedicated environments.
- **Publicsurveynotification** -Used to setup the mail address(es) of groups/persons (administrators) that must be contacted when you want to create a public survey (available for everybody)
- **ui.enableresponsive** - set this value to true if you expected the usage of differents device for the answering of your surveys (see release note) By Default this property is set to false
- **ui.enablearchiving** - allow the archiving of old surveys by setting this property to true, by default the value is false (see release note). WARNING by enabling this feature you can have a negative impact on the performance
- **ui.enablefilemanagement** - this property allows the management of files generated by the application (export,…) under the configuration section of EUSurvey (you should be an admin to get this feature). By default the value is set to true. For more explanation about this feature please refer to the release note.

Possible values are acceptance/stress/test or development

```
# database properties
app.jdbc.driverClassName=com.mysql.jdbc.Driver
app.jdbc.url=jdbc:mysql://localhost/eusurvey?characterEncoding=UTF-8
app.jdbc.username=eusurveyuser
app.jdbc.password=sm0t4Gj4sd

# web proxy configuration (in case your server has no direct internet connection)
proxy.host=your.proxy.com
proxy.port=8081
proxy.user=username
proxy.password=password

# export configuration
export.tempFileDir=C:/temp/
export.fileDir=C:/temp/files/
export.poolSize=2

server.prefix=http://server:port/eusurvey/
export.xsllink=http://server:port/eusurvey/resources/xsl/eusurvey.xsl
pdfserver.prefix=http://server:port/eusurvey/

# mail configuration
smtpserver=smtp.server.com
smtp.port=25
sender=info@myServer.com
```

Figure 39: Configure the spring,properties file.

Automatic translation

If you want to use the translation tools, see after the chapter concerning the automatic translation (see prerequisites)

```
# if false use Microsoft translation otherwise European Commission machine translation
mt.use.ec.mt=false

# If you want use MST translation for your survey you have to register
# to the Microsoft Translator data service, please refer to the OSS installation guide
microsoft.translation.client.id=your account here
microsoft.translation.client.secret=your secret phrase here
```

After successful modification, save your changes back to the WAR file you have edited.

Hint

Please notice that the system needs to be configured to connect to a working SMTP server to be able to send out email invitations for secured surveys. Please make sure the configured connection allows emails to be sent, before making this feature available to your users.

Human verification and Captcha

The application has, by default, included a captcha verification system from Google. If you do not want this kind of verification or if you do not have access to the web, you can disable this option.

To disable it on the spring.properties file, search for the property captcha.bypass and set the value to "true".

If you want to use the recaptcha system, you need a Google account. In order to get this, go to the Google website https://www.google.com/recaptcha/intro/invisible.html

- Select "Get reCAPTCHA"
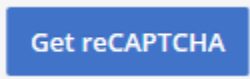
- Create your account (or log in with your Google account) and follow the instructions
- You will receive a captcha key and secret. Then, you have to update in the spring.properties file(s) the properties "captcha.key" and "captcha.secret"

As a third alternative you can use jCaptcha, instead of using reCAPTCHA. jCaptcha is already included in EUSurvey and can be activated by switching a flag in the SETTINGS table of the database. Set the SETTINGS_VALUE of the SETTINGS_KEY *captcha* either to *recaptcha*, *internal* (jCaptcha) or *off*.

List of public surveys - configuring mail to accept or decline public surveys

As administrator, you have to accept or decline surveys that are declared as public. As soon as they are accepted, the surveys will be available in EUSurvey's "Public list of Surveys".

EUSurvey has a dialog box to send e-mails to the survey managers in telling them that their survey has been accepted or denied. In this dialog box, you can configure two fields: "Reply to" and the signature.

For "Reply to", this has to be done through the spring.properties, by setting the sender property. For the Signature field, go to /src/main/webapp/WEB-INF/views/administration/publicsurveys.jsp. On this page, search for this statement below and replace the hidden type signatureValue with the appropriate value.

```
<c:choose>
      <c:when test="${oss}">
             <input type="hidden" value="${sender}" id="replyToValue"/>
             <input type="hidden" value="Your team" id="signatureValue"/>
      </c:when>
```

Data Collection and Privacy Best Practices

In terms of data protection you are responsible for the data that is stored on your EUSurvey instance. It is therefore highly recommended to disclose your privacy practices to your users by providing a privacy statement for EUSurvey.

By default the OSS release has an empty privacy statement page. If you want to configure this page to publish your own privacy statement, you have to edit the file called **tos.jsp** that you can find on the **WEB-INF/views/auth** path. If you don't want to have a privacy statement page, you can hide the link on the **footer.jsp** file on the **WEB-INF/views** path by removing the <a href> tag for privacy statement (see the following code):

```
<div style="float:right; width: 300px; text-align: right">
        …
        <a href="<c:url value="/home/privacystatement"/>"><spring:message
code="label.PrivacyStatement.bis" /></a>
        </div>
```

With this privacy statement, you inform your users on how you are handling data in EUSurvey. It should detail at least the following things:

- **An introduction referring to the privacy or data protection rules of your country (legislation may differ from country to country!)**
- **Why are you collecting data**
- **Who is responsible for the processing of the data**

- **What personal information you are collecting**
- **To whom your data is disclosed**
- **For how long you are keeping the information in the database**
- **What are the contact points for questions, complaints and recourse**

Many organizations are themselves regulated by data privacy laws and regulations, as well as internal policies. You should ensure that you are familiar with these, as you will be responsible for ensuring that your EUSurvey instance complies with these requirements.

For further information you may also wish to consult the website about data protection rules in the EU.

Create the WAR archive

Once you have correctly configured your application, you can compile the application and export a WAR file for deployment on the Servlet Container.

To do so, we will use the Maven tool, first exit from your IDE.

Locate where you have extracted the source code, and open a command prompt to this location

Hint: to be sure of the execution you have to open the command prompt in the folder where the pom.xml file is present.

Type this execution line **mvn clean package** this will execute:

- a clean of old previous compiled file remaining
- Check if there is no error at the compile time
- Execute the creation of the WAR file

If this execution is successful then the generated WAR file will be present on the **target** subfolder

Ex if you saved your sources file to c:\eusurvey the war file will be located below c:\eusurvey\target folder.

Warning

Make sure the name of the exported file is really "eusurvey.war", given that this name is crucial for conducting self-referenced calls to the application. The application will not work if deployed under a different name.

The WAR file you have just exported basically contains the configured application that can be deployed on an arbitrary web-container of your choice to run the application.

5. Deploy the application

Now that the application has been configured correctly, it is ready for deployment on a Servlet Container for execution.

To deploy a web-application, one of the easiest ways is to copy the WAR file to a folder the application server will check regularly for new applications to deploy.

For Apache Tomcat, this folder is called "webapps" and is located in the server's folder under "Program Files". To deploy the application, just copy the WAR archive you exported in a previous step to the application server's "webapps" folder.
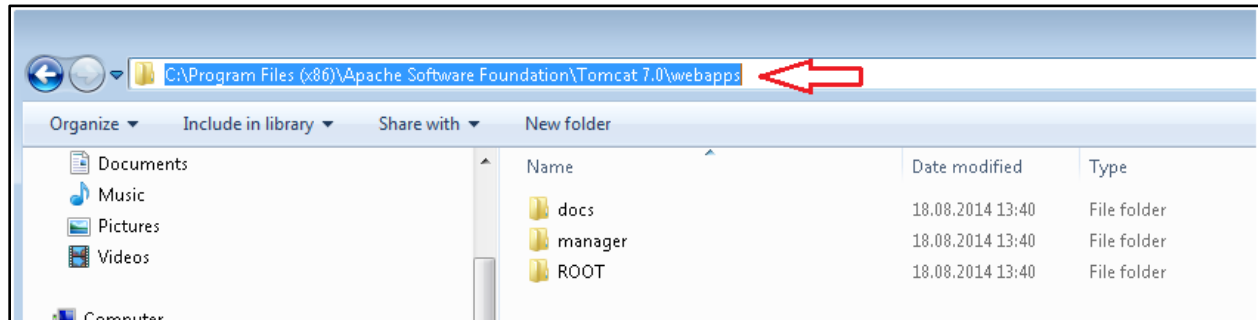

Figure 40 - Copy the application to the auto-deploy directory of Tomcat.

As soon as the server has been started, open the root URL of EUSurvey that is:

http://localhost:8080/eusurvey

Please notice that on first access, the application will start creating the database structure and will do some initial configuration work. This might take a couple of minutes.

As soon as the application has finished the system initialization, the browser will show the application's welcome page:

Figure 41 - The application's welcome screen.

Troubleshoot

In case the web-page is not displayed, please make sure Tomcat has been started from the System Service view.

6. Importing Language Table

After the first deployment, the application only supports three different languages: English, French and German. In order to add more languages, you will have to import the "iso639-1.xls" file, contained in the source data.

You can find this file at this location within your unzipped source data:

src/main/webapp/WEB-INF/Content

If you open the file, you will see a table with 186 languages, their native writing, the official language code and a fourth column (column D). All languages marked with a "1" in column D will be imported. Initially, all EU languages are marked to be imported. You can add/remove languages to be imported by simply adding/removing a "1" in column D.

To actually import the data (admins only), you will have to open the following URL:

[SERVER]/eusurvey/administration/languages

Select the file and then click "Import".

Figure 42 - Preview of language list

7. First Steps on EUSurvey

Once you have successfully deployed the application on your own application server, you are ready to either run or modify your own instance of EUSurvey.

Depending on what is planned to do next, the interested reader is referred to the following documentation:

- The Quick Start Guide - for creating a survey right away (for Survey Managers)
- The Help pages - for advanced information on how to create surveys (for Survey Managers)
- The Developers Guide - for technical details of the application and basic information on how to interact with the provided IDE (for Developers)
- The EUSurvey community forum on JOINUP

User Management

The system has a default admin account to let you manage your users. The default username and password of this account are "admin" (username) and "admin" (password).

To be able to create new users, enter the Administration area of EUSurvey, via the little gear-wheel icon in the top right corner of page
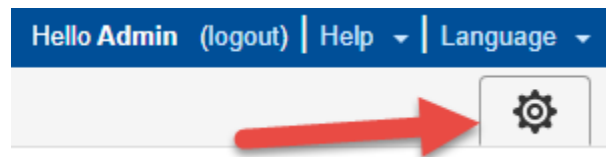

Figure 43 - Enter the administration area

There you will find a category called "Users" from where you can create new users and give them rights. In order to add a new User, click on the "Add User" button and fill out the requested information.
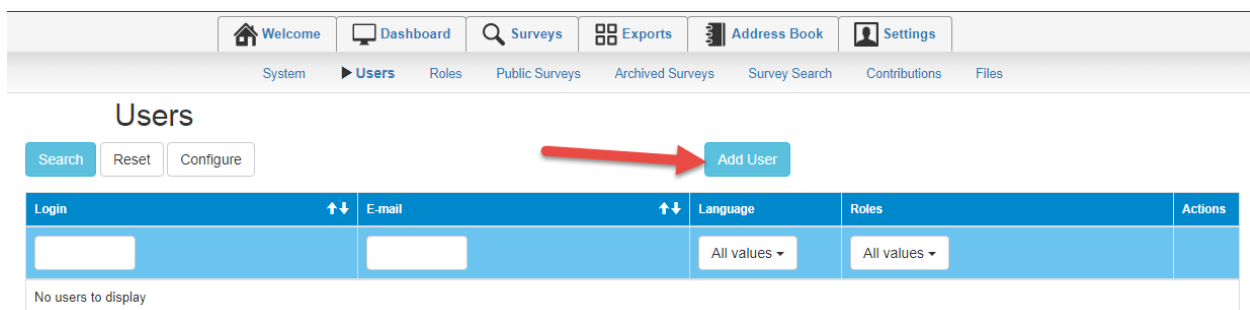

Figure 44 - Add new system user to the application