



Model Tribal System

Designed By Tribes, For Tribes

Eclipse Developer's Manual

June 04, 2014

Version 1.21



**Department of Health and Human Services
Administration for Children and Families
Office of Child Support Enforcement**

REVISION HISTORY			
Version	Date	Description of Change	Approval
	5/10/2013	Initial Modification and standardization	MG
	5/20/2013	Corrected some Windows installation of MySQL instructions and some typos and formatting	MG
	6/3/2013	Incorporated some feedback, and added instructions on how to debug client flex side	MG
	6/11/2013	Restructured to get libraries and db scripts from Alfresco instead of SVN. Some minor updates	MG
	6/18/2013	Changes for MACOS, keeping ports up to date	MG
	6/18/2013	Flex and Reports are split out into two new projects	MG
	6/18/2013	Flex and Reports are split out into two new projects	MG
	6/18/2013	Incorporate changes from Chinh Dao	MG
	7/11/2013	More enhancements from Mr. Dao. Also moved the location of sample database	MG
	7/25/2013	Adding some default MySQL scripts to run to prepare the db for use. Fix a few typos	MG
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1 Document Conventions

To highlight the most important points, the following terms are used to draw attention to key information and settings.

Key:

Configuration	Indicates a recommended setting or configuration parameter to set.
Information	Highlights important facts and information to help the installer better understand the installation and make better use of the installed components.
Caution	Highlights areas where potential problems can arise, or misconfigurations occur, to help the installer avoid errors or loss of data.

This document uses the following typographic conventions:

Brackets indicate a clickable screen button or field.

Example: [Button]

2 About this Document

This document provides instructions on how to manually install and configure the various open source products and tools as part the eventual installation of the Model Tribal System (MTS).

This document is intended to explain how to:

- Create the standard development environment for the MTS application, with the latest Office of Child Support Enforcement approved technologies
- Understand and interact with the install programs
- Complete a basic pre-configuration install of the MTS

Information

This document does not cover the customized application configuration or use of an installed MTS application. To learn how to configure or us the MTS, refer to other documentation.

Caution

This document may be updated to reflect changes in one or more of the open source products used in the installation and configuration process. The latest version can always be found in Alfresco.

3 Process Overview

The process consists of three major areas. Each process must be completed in order and completely before the next process can begin. The major process areas consist of the following high-level steps below:

3.1 Software Overview

In this section we will discuss system requirements, and software requirements. The installation files can be obtained from the internet, one tool requires licensing and another simple registration. It is expected that the user is knowledgeable in how to obtain basic tools from the Internet.

3.2 Installation of Development Tools

The installation & deployment process is comprised of the sub-processes listed below. Each sub-process is described in detail with steps for completing the tasks and screen shots.

Caution The reader must follow the subsections in the order presented within this guide. Each sub-process must be completed in its entirety before commencing to the next sub-process in the sequence.

3.3 Application Configuration

This process consists of application configuration, and database installation/update.

3.4 Prepare, Deploy, and Launch the Application

This section will give instructions on final database setup with structure/data and actually launch the Application.

Information A complete install and deployment can be expected to be performed in four hours, pending any unforeseen issues.

4 Software Overview

The application consists of a tightly coupled set of tools, all built on/with Java.

Before you start installing any of the tools below, make sure you have the correct version of Java SDK installed on your machine.

4.1 Operating System and Java Requirements

<i>Operating System</i>	<i>Version</i>	<i>Java Version</i>	<i>Link</i>
MAC OS X	10.7 or later	Java for OS X 2013-003 (Java 1.6.0_45)	http://support.apple.com/kb/DL1572
Windows	7 or later	Java 1.6.0_65	http://www.oracle.com/technetwork/java/javase/downloads/jdk6downloads-1902814.html

To test what version of java you have installed:

Open a terminal/command window and type: `java -version`

If you show earlier than java 1.6.0_65, then you should install a later version of 1.6.

Caution Do NOT install Java 1.7 SDK. The Adobe Flex Builder does not support Java 1.7.

4.2 Software Requirements

4.2.1 Platform Independent

<i>Application</i>	<i>Version</i>	<i>Filename</i>	<i>Link</i>
Jboss	5.1	jboss-5.1.0.GA-jdk6.zip	http://sourceforge.net/projects/jboss/files/JBoss/JBoss-5.1.0.GA/

4.2.2 Mac OS X Platform

<i>Application</i>	<i>Version</i>	<i>Filename</i>	<i>Link</i>
Eclipse IDE	Juno / 4.2	eclipse-jee-juno-SR2-macosx-cocoa-x86_64.tar.gz	http://www.eclipse.org/downloads/
Flash Player Plugin content debugger	11 or above	flashplayer_11_plugin_debug.dmg	http://www.adobe.com/support/flashplayer/downloads.html
MacPorts	2.1.3	MacPorts-2.1.3-10.8-MountainLion.pkg	http://www.macports.org/install.php
Xcode	4.6.2 or above		AppStore
MySQL	5.1	mysql-5.1.56-osx10.6-x86_64.dmg	http://dev.mysql.com/downloads/mysql/5.1.html
Adobe Flash Builder	4.7	FlashBuilder_4_7_LS10.dmg	http://www.adobe.com/products/flash-builder-standard.html This product requires a license key.
MySQL Workbench	5.2	mysql-workbench-gpl-5.2.47-osx-i686.dmg	http://dev.mysql.com/downloads/tools/workbench/

4.2.3 Windows 7 Platform

<i>Application</i>	<i>Version</i>	<i>Filename</i>	<i>Link</i>
Eclipse IDE	Juno / 4.2	eclipse-jee-juno-SR2-win32-x86_64.zip	http://www.eclipse.org/downloads/
Adobe Flash Player debugger	11 or above	This varies based on your Windows Version (7 vs 8) memory bit size (64 vs 32) and for Windows 7 IE vs. Netscape compatible browser	http://www.adobe.com/support/flashplayer/downloads.html

<i>Application</i>	<i>Version</i>	<i>Filename</i>	<i>Link</i>
SlikSVN	1.7.9	Slik-Subversion-1.7.9-x64.msi	http://www.sliksvn.com/en/download
MySQL Installer	5.6	mysql-installer-community-5.6.11.0.msi	http://dev.mysql.com/downloads/
Adobe Flash Builder	4.7	AdobeApplicationManager.exe	http://www.adobe.com/products/flash-builder-standard.html This product requires a license key.

5 Installation of Development Tools

It is assumed that the reader knows how to install Java; therefore Java installation is not included in these instructions.

5.1 Install Flash Debugger

There is nothing special about installing the debug version. Follow standards instructions for installing any browser plugin.

To test that the debug version is installed:

- Go to <http://helpx.adobe.com/flash-player/kb/find-version-flash-player.html>
- Then in the box that says “Flash player is running on your screen”, right click to see if a menu option comes up that states [Debugger]. See Figure 1

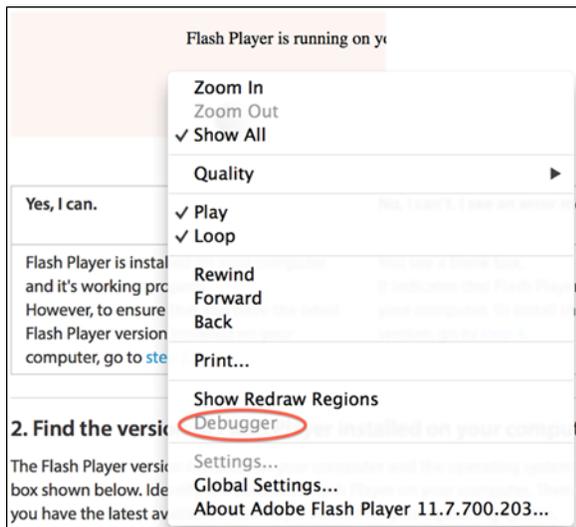


Figure 1

5.2 Install Subversion

Subversion is required to support the retrieval of software. In MAC OS the subversion plugin for Eclipse does not include the native libraries, so they absolutely must be installed. For both platforms, the subversion client will be required in the development environment if we wish to use Maven.

5.2.1 Windows Installation

Procedure:

Simply install the SlikSvn application.

Caution Make sure you select COMPLETE installation.

5.2.2 MAC OS X Installation

Procedure:

The only consistent mechanism for installing the subversion native libraries is to build them. CollabNet for MAC OS is supported by community developers, so may or may not work for the OS version that you have.

First you need to install Xcode from *App Store*.

Once that is completed, start the Xcode application. Go to *[Xcode]->[Preferences]->[Downloads]* and install component named "Command Line Tools". After that, all the relevant tools will be placed in */usr/bin* folder and you will be able to use them.

For later version of Xcode (5+) once you have launched Xcode at least once, then open command line and type: *xcode-select --install*

Now install MacPorts application package.

Caution MacPorts is Version specific to the OS.
If you are running MAC OS 10.7 use MacPorts-2.1.3-10.7-Lion.pkg
If you are running MAC OS 10.8 use MacPorts-2.1.3-10.8-MountainLion.pkg

Information In MAC OS, when installing an application from other than the AppStore, you will have to change your security parameters in setup to allow you to install an application that is not identified.

Once you have installed MacPorts then:

Make sure that MacPorts is up to date. Open a *new* terminal and type:

sudo port selfupdate

You will be asked for your password.

Ports will now check to see if it's up-to-date. It may look something like this:

```
Mikes-MacBook-Pro:~ mgoshorn$ sudo port selfupdate
Password:
---> Updating Mac Ports base sources using rsync
MacPorts base version 2.1.3 installed,
MacPorts base version 2.1.3 downloaded.
---> Updating the ports tree
---> MacPorts base is already the latest version
The ports tree has been updated. To upgrade your installed ports, you should run
  port upgrade outdated
Mikes-MacBook-Pro:~ mgoshorn$
```

Information

Later when doing upgrades to the installed version of subversion, you can following the instructions listed above: `sudo port upgrade outdated`

This will update subversion to the latest version.

In the terminal type the following command:

```
sudo port install subversion-javahlbindings +no_bdb +universal
```

This will take quite some time. (20+ minutes depending on network and machine speeds)

The final 4 steps of the process will look like this:

```
---> Cleaning subversion-javahlbindings
---> Updating database of binaries: 100.0%
---> Scanning binaries for linking errors: 100.0%
---> No broken files found.
Mikes-MacBook-Pro:~ mgoshorn$
```

Then the job will finish and return to the command prompt.

Information

You may wish to read the post at the below link to understand more about JavaHL: <http://subclipse.tigris.org/wiki/JavaHL#head-5bf26515097c3231c1b04dfdb22c036bc511926b>

5.3 Test SVN installation.

Test that the command line SVN tools are working and what version you have:

Procedure:

In a terminal/command window type: `svn -h`

You should get a usage response, telling you all the command line options.

```
Mikes-MacBook-Pro:~ mgoshorn$ svn -h
usage: svn <subcommand> [options] [args]
Subversion command-line client, version 1.7.10.
Type 'svn help <subcommand>' for help on a specific subcommand.
Type 'svn --version' to see the program version and RA modules
  or 'svn --version --quiet' to see just the version number.
Etc...
```

You need to make sure you have version 1.7.1 or later.

5.4 Create Eclipse Workspaces

Information MTS supports three environments in Subversion. Production is in the trunk, test and devl code base in under the branches.

Procedure:

Create a new folder off the root directory of your computer named

EclipseWorkbench

Create a folder called *Workspaces* under EclipseWorkbench folder.

Drill-down into the *Workspaces* folder and create three additional folders as follows:

- *devl*
- *test*
- *prod*

When done you should have the following: Figure 2

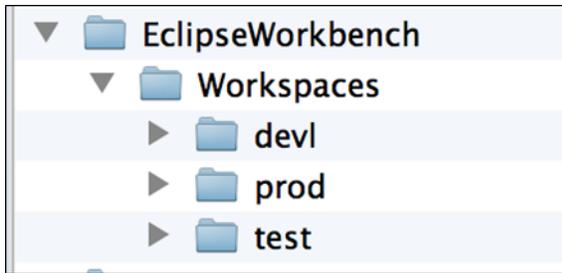


Figure 2

5.5 Eclipse Installation

Unzip the Eclipse into the *EclipseWorkbench* Folder and rename the folder “eclipse” to *Eclipse64*.

5.6 JBoss Application Server Installation

Unzip and copy the JBoss zip file under the *EclipseWorkbench* folder. See Figure 3

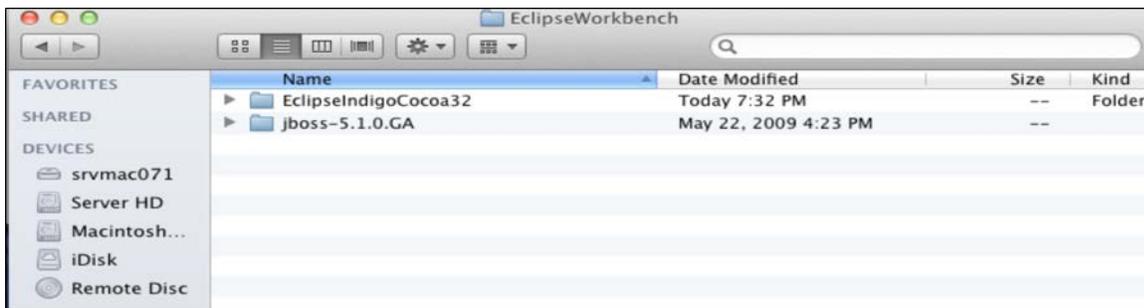


Figure 3

5.7 Temporarily Disable Any Virus Protection Software

Virus protection software could inhibit or block the downloading of updates during the next steps. When this process is complete, you should re-activate your virus protection software.

5.8 Adobe Flash Builder Installation

This process will vary by MAC OS or Windows environments.

5.8.1 MAC OS X Installation

Procedure:

Create a folder named *AdobeFlexBuilder* under the *EclipseWorkbench* folder.

Proceed with the install of Flash Builder. See Figure 4

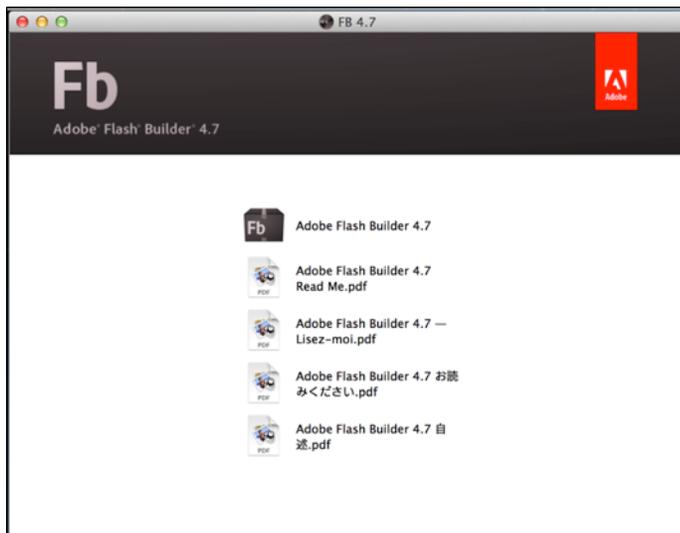


Figure 4

Double click on [Adobe Flash Builder] icon at the top.

Double click the Install.app. See Figure 5



Figure 5

Application will initialize. See Figure 6

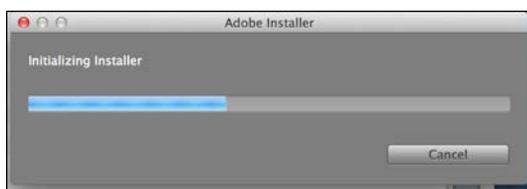


Figure 6

Then select “Install”. See Figure 7

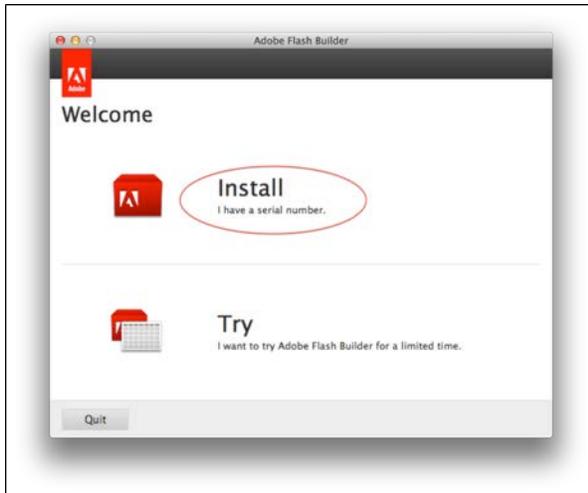


Figure 7

Accept the license Agreement.

On the next page enter a license key. Click [Next].

If you have an upgrade license key, you will be required to enter the license key of the original version. See Figure 8

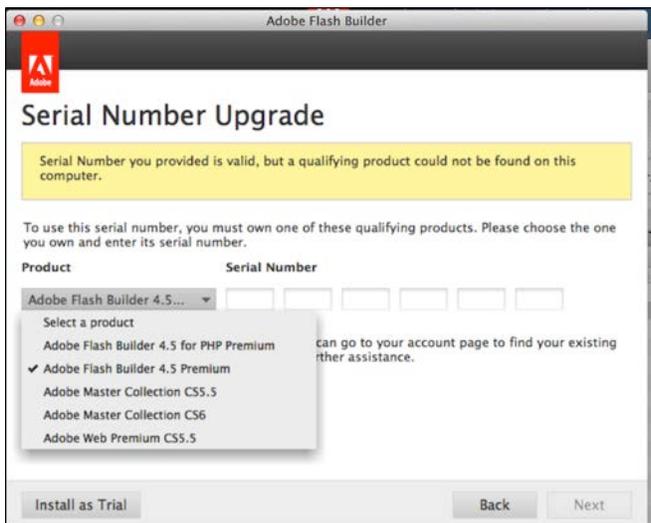


Figure 8

Once this is done, Adobe will require you to login. See Figure 9

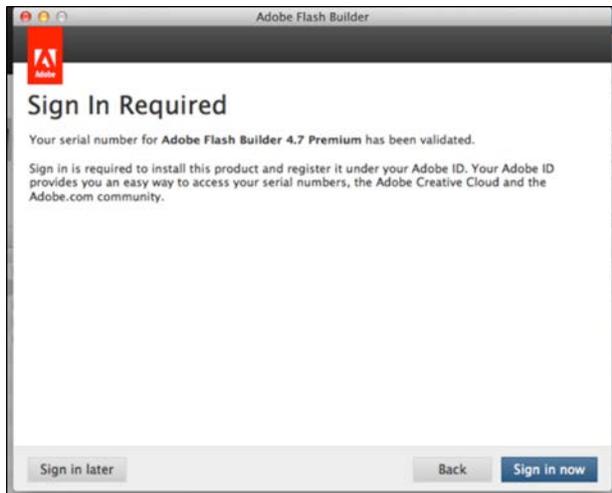


Figure 9

Finally when this is complete you will be shown the options screen.

You can select both Options, but only [Adobe Flash Builder 4.7] is required. See Figure 10

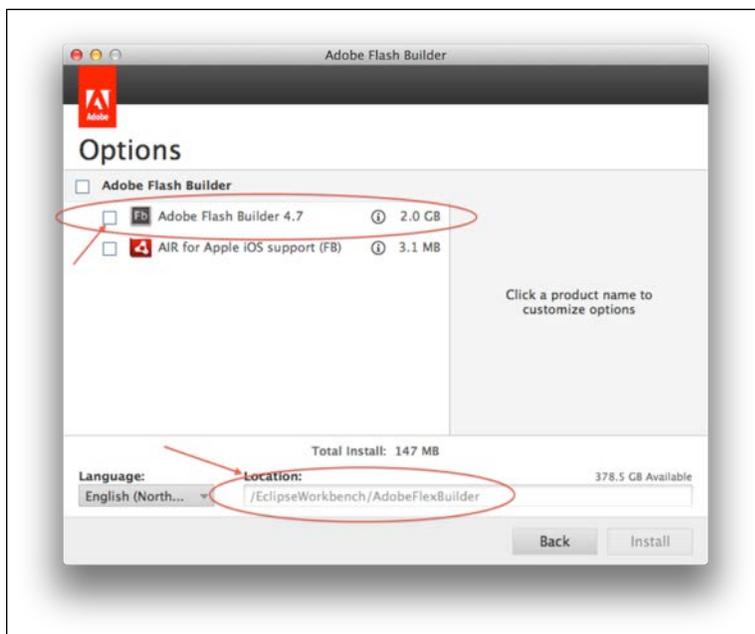


Figure 10

Notice the "Location:" section at the bottom. Make sure to enter

/EclipseWorkbench/AdobeFlexBuilder

Then click [Install].

The application will proceed to install. See Figure 11



Figure 10

5.8.2 Windows Installation

Procedure:

Run the AdobeApplicationManager.exe.

Initialization might take some time (2+ minutes) so be patient. See Figure 12.

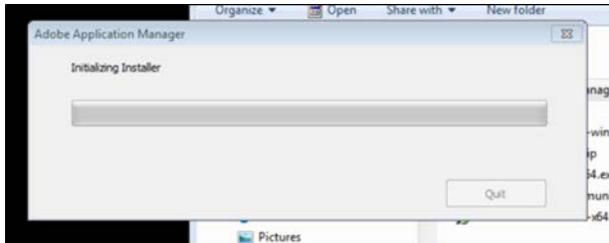


Figure 11

Sign in: See Figure 13



Figure 12

Accept the licensing agreement. See Figure 14.

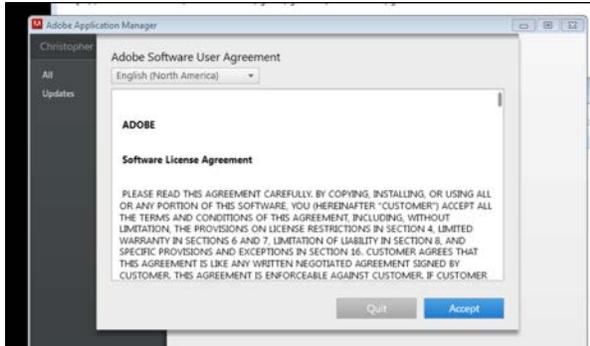


Figure 13

Now find the Flex Builder Application. See Figure 15.

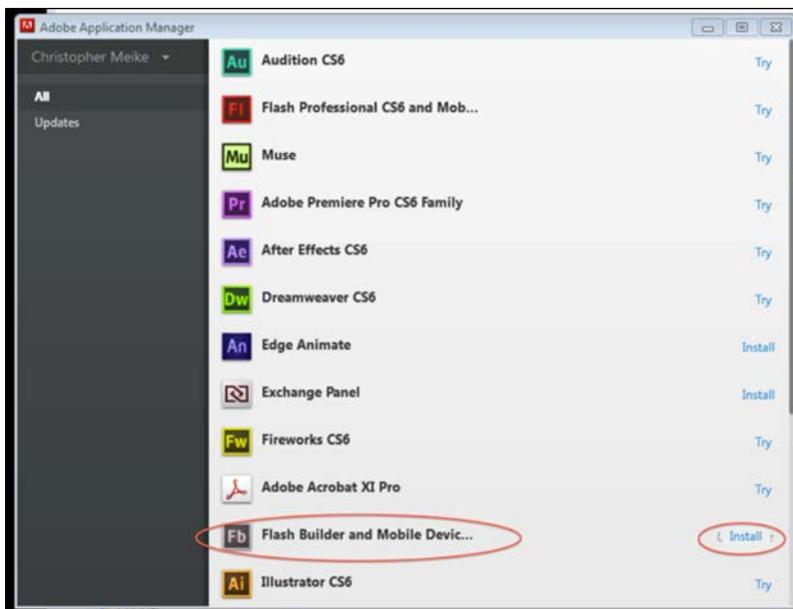


Figure 14

Then click [Install].

You will be asked if you want a trial of official version. See Figure 16.

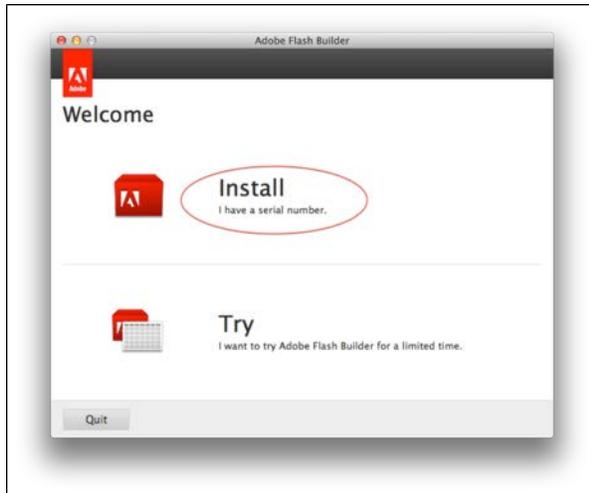


Figure 15

Enter the Serial Number on the next page, and then follow the instructions. The default installation will go to C:\Program Files\Adobe\Adobe Flash Builder 4.7 (64 Bit).

5.9 Install Adobe Flash Builder Plugin

After successful installation of Adobe Flash Builder, installation of the Adobe Flash Builder Eclipse Plug-in is required.

Procedure:

Find the AdobeFlexBuilder directory:

MAC OS: /EclipseWorkbench/AdobeFlexBuilder/Adobe Flash Builder 4.7

Windows: C:\Program Files\Adobe\Adobe Flash Builder 4.7 (64 Bit)

There you will find a utilities directory.

Double click on the “Adobe Flash Builder 4.7 Plug-in Utility (.app in MAC OS [Figure 17], .exe in Windows [Figure 18]).

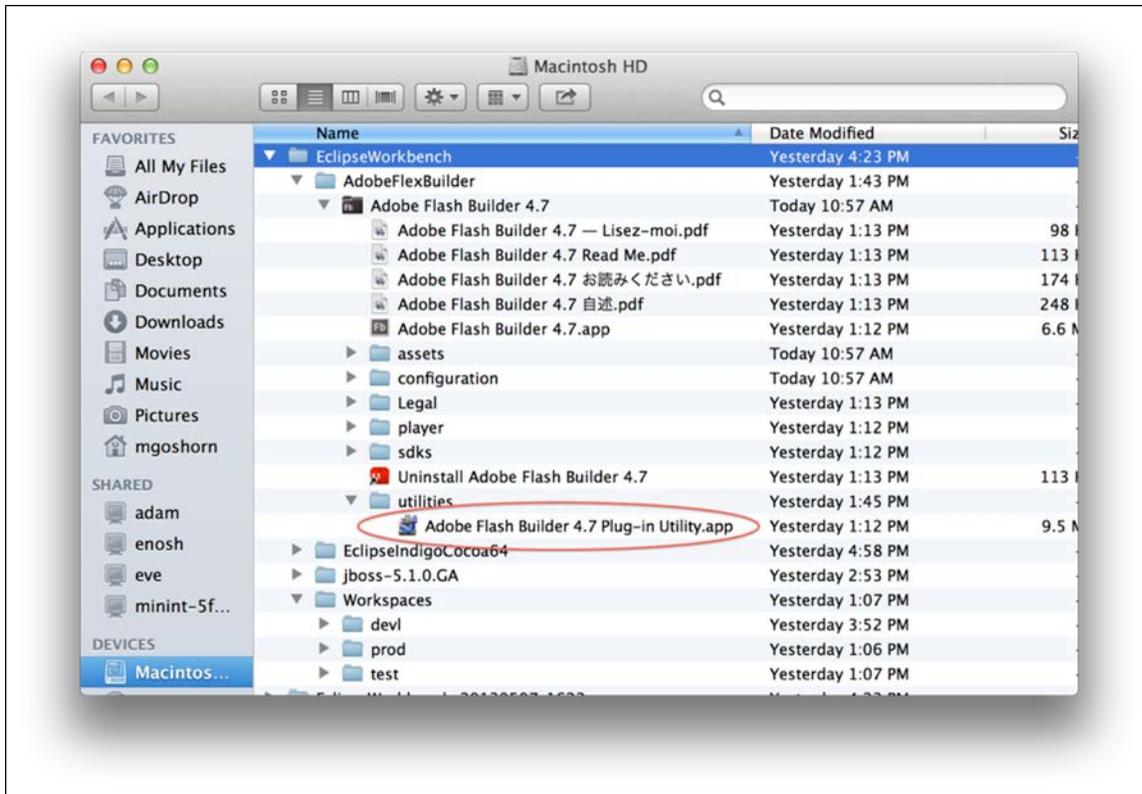


Figure 16

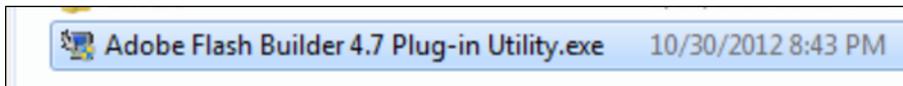


Figure 17

Flash Builder supports installation as a plugin to an existing Eclipse instance. Follow the steps below:

Select the language and click [OK].

Select the Flash Builder installation location:

MAC OS: /EclipseWorkbench/AdobeFlexBuilder/Adobe Flash Builder 4.7

Windows: C:\Program Files\Adobe\Adobe Flash Builder 4.7 (64 Bit)

Select the eclipse folder into which you want Flash Builder to be plugged into (/EclipseWorkbench/Eclipse64) and click [Next].

Review the pre-installation summary and click on [Install].

On a MAC, you might get the following popup as shown in Figure 19.



Figure 18

If you do get the popup, just click [Yes to All]. If you didn't, then don't worry about it. And you should finally be presented with this screen. See Figure 20.

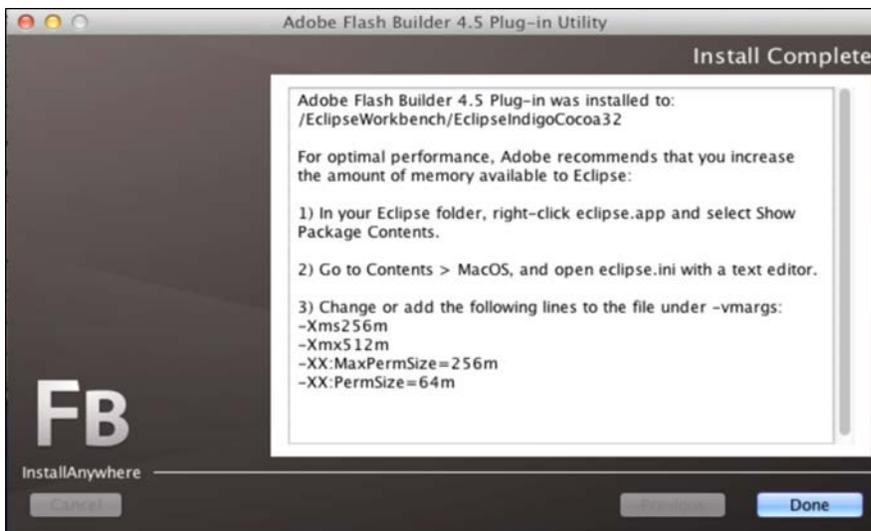


Figure 19

5.10 Modify eclipse.ini File

Following installation, it is recommended that you edit the eclipse.ini file for your Eclipse instance, so that it includes the following settings under:

“-vmargs”:

```
-Xms512m  
-Xmx2048m  
-XX:MaxPermSize=256m  
-XX:PermSize=64m  
-XX:+UseParallelGC
```

See below for example edited file.

5.10.1 MAC OS Installation

Procedure:

Find the Eclipse.app line. Right click on it and click on [Show Package Contents]. See Figure 21.

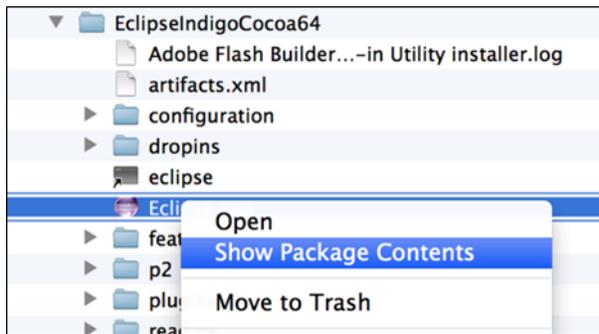


Figure 20

Then find eclipse.ini (See Figure 22)

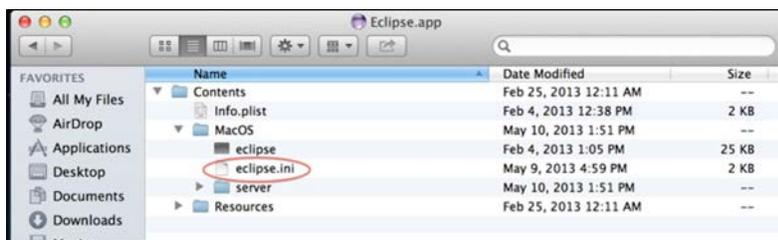


Figure 21

5.10.2 Windows Installation

Procedure:

Using Windows Explorer find:

C:\EclipseWorkbench\Eclipse64\

Find eclipse.ini listed in that directory.

5.10.3 Modify the eclipse.ini file.

Procedure:

Edit it with text editor. Modify or add the arguments shown in 5.10 above. See Figure 23.

Caution Be very careful to choose a text editor that does not add “invisible” characters to the file. For example MSWord would NOT work. It's best to modify the file with either vi (MAC) or the notepad command (Windows), from a terminal/command window. Introduction of invisible characters or other improper formatting could cause the application fail to start.

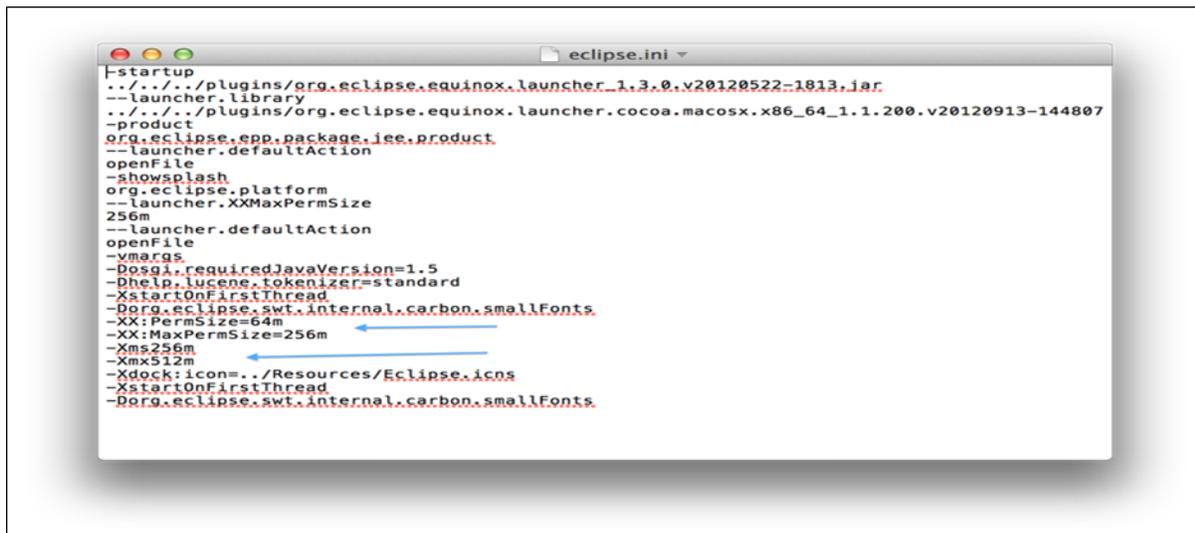
A screenshot of a text editor window titled 'eclipse.ini'. The window contains a list of command-line arguments for the Eclipse launcher. The arguments are: -lstartup, -plugin:../plugins/org.eclipse.equinox.launcher_1.3.0.v20120522-1813.jar, --launcher.library, -plugin:../plugins/org.eclipse.equinox.launcher.cocoa.macosx.x86_64_1.1.200.v20120913-144807, -product org.eclipse.epp.package.see.product, --launcher.defaultAction openFile, -showsplash, org.eclipse.platform, --launcher.XXMaxPermSize 256m, --launcher.defaultAction openFile, -vmargs, -Dosgi.requiredJavaVersion=1.5, -Dhelp.lucene.tokenizer=standard, -XstartOnFirstThread, -Dorg.eclipse.swt.internal.carbon.smallFonts, -XX:PermSize=64m, -XX:MaxPermSize=256m, -Xms256m, -Xmx512m, -Xdock:icon=../Resources/Eclipse.icns, -XstartOnFirstThread, and -Dorg.eclipse.swt.internal.carbon.smallFonts. There are blue arrows pointing from the text '256m' in the -XX:MaxPermSize=256m line to the -Xms256m line, and from the text '512m' in the -Xmx512m line to the -XX:MaxPermSize=256m line.

Figure 22

5.11 Launch Eclipse

Procedure

Launch Eclipse from the *Eclipse64* folder.

MAC OS: Eclipse.app

Windows: eclipse.exe



Figure 23

When eclipse launches, a “Workspace Launcher” dialog box will appear (see Figure 24). Click [Browse...] and navigate to the *EclipseWorkbench/Workspaces* directory. Select the [devl] workspace under workspaces directory. See Figure 25.

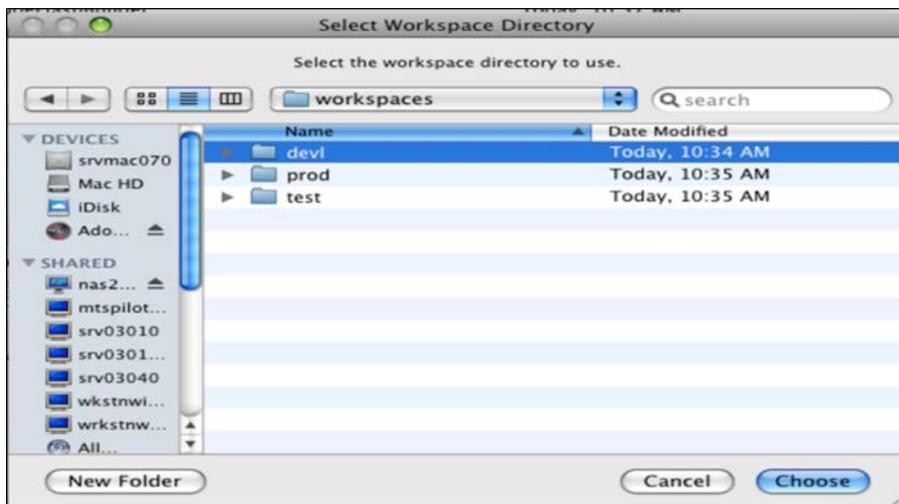


Figure 24

After selection the Dialog should look like Figure 26.

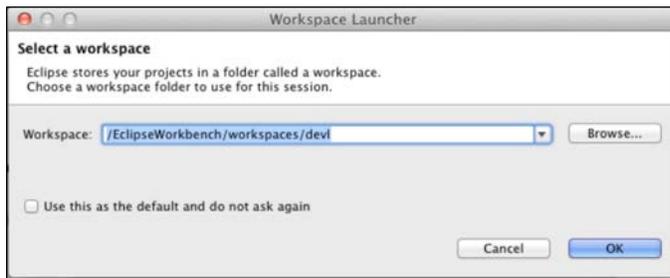


Figure 25

Click [OK]

Close the welcome screen by clicking on the [Workbench]. See Figure 27.



Figure 26

5.11.1 Install Subclipse Plugin for Eclipse

There was once great debate about which Subversion tool to plugin to Eclipse: Subclipse or CollabNet. CollabNet has a more robust “merge” tool.

This debate is now moot.

As part of the development of the merge tracking feature in Subversion 1.5, *CollabNet*, the corporate sponsors of the Subversion project, developed a powerful graphical merge client feature on top of Subclipse. This has been available since the release of Subversion 1.5 as part of the *CollabNet Desktop - Eclipse Edition*, an open-source and EPL licensed desktop for accessing *CollabNet TeamForge* from Eclipse.

CollabNet has now made this merge client available to Subclipse users as part of the installation of Subclipse 1.6.x from the Subclipse update site. Users who want the full functionality of the CollabNet Desktop can still install the desktop, but those just looking for an excellent Subversion merge client now have an easier way to install this client into Eclipse.

Information

On the MAC, you must have the SVN client installed, and the version installed must match the subclipse version. At the time of this publication that was 1.7.x. You can find your SVN version by going to the terminal and typing: `svn -version`

Visit <http://subclipse.tigris.org/wiki/JavaHL> to see the required SVN version mapping.

Procedure

Click on Menu Bar: [Help] -> [Eclipse Market Place ...]. See Figure 28.

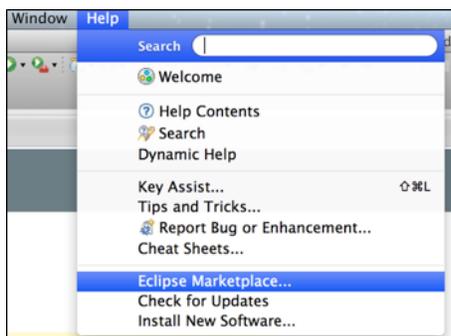


Figure 27

In the marketplace, search for “subclipse”. See Figure 29

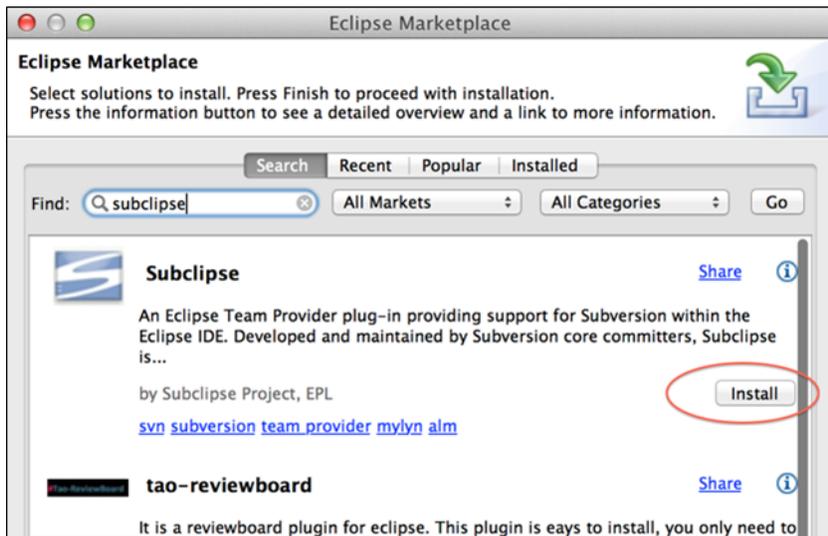


Figure 28

Then click [Install] and follow the instructions.

You will get this Security Warning. See Figure 30.



Figure 29

Click [OK]

At the end, the process will ask to restart Eclipse. See Figure 31.



Figure 30

Click [Yes].

When it re-starts up reselect the workspace, and click [Workspace].

Then you will get the following: See Figure 32

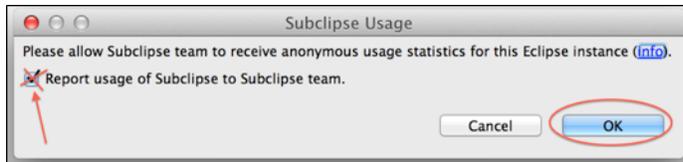


Figure 31

You can choose to report usage to the Subclipse team, but I recommend against it. Make your choice, and then click [OK].

5.11.2 Install JBoss tools Plugin for Eclipse

Procedure

Click on the Menu Bar: [Help] -> [Eclipse Market Place ...].

In the Marketplace, search for JBoss tools.

Look for the correct version (Juno). See Figure 33.



Figure 32

Then click [Install] and follow the instructions. Again, you will be warned about security. See Figure 34.



Figure 33

Click [OK]

It will ask to restart Eclipse. Click [Yes]. When it starts up reselect the workspace, and click [Workspace].

Then you will be asked if you want to participate in JBoss usage reporting. See Figure 35.



Figure 34

I recommend that you click [NO].

5.11.3 Install Jaspersoft Studios

Procedure

Click on the Menu Bar: [Help] -> [Eclipse Market Place ...].

In the Marketplace, search for Jaspersoft. See Figure 36.

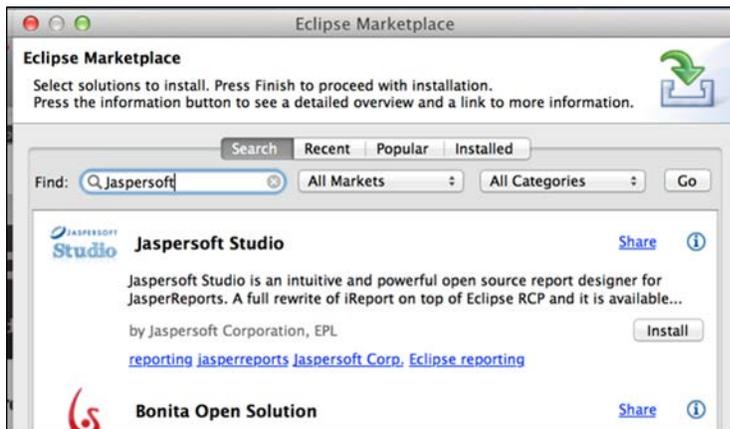


Figure 35

Then click [Install] and follow the instructions.

Again, you will be warned about security. See Figure 37.



Figure 36

Click [OK]

Again it will ask to restart Eclipse. [Yes]

After you click on the workbench, you will NOT be presented with a usage popup this time.

5.11.4 Make Eclipse Check for Updates and Install

Procedure

Click on the Menu Bar: [Help] -> [Check for Updates]

If the system finds any software to update, update everything in the list, accept any license agreements, and close and restart eclipse once everything is installed.

5.11.5 Turn off Automatic Builds

Procedure:

Click on Project from the Eclipse Menu Bar (see above). Click on the “Build Automatically” option to turn it off. See Figure 38.

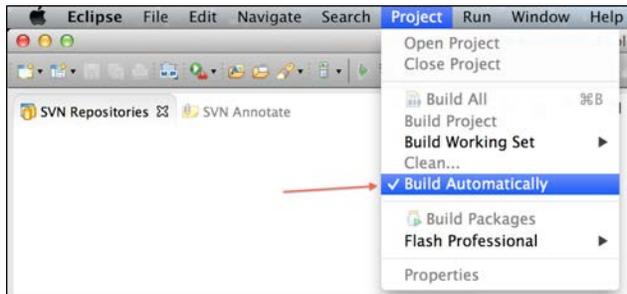


Figure 37

5.11.6 Verify Java SDK

Procedure:

Navigate to the Preferences pop-up:

MAC OS: [Eclipse] -> [Preferences].

Windows: [Windows] -> [Preferences].

Expand Java and then click on [Installed JREs] from the list.

Make sure that the correct Java SDK was installed: See Figure 39.

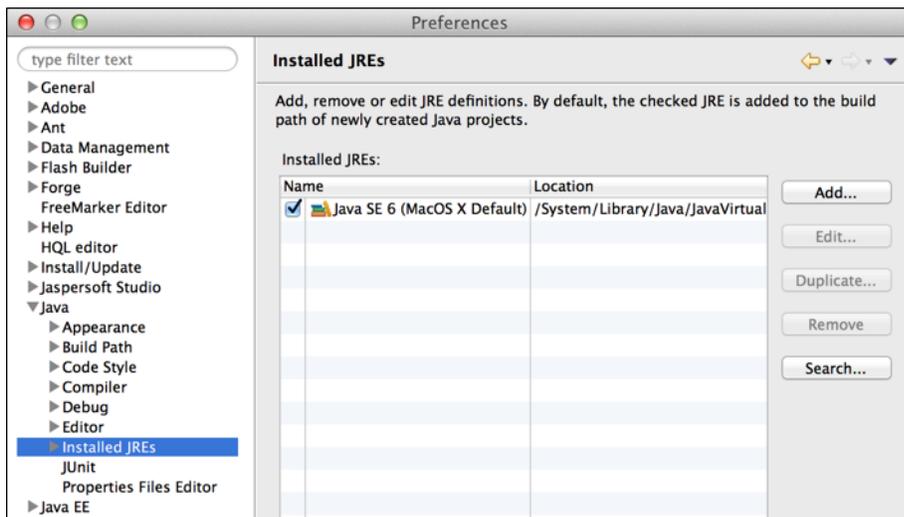


Figure 38

Expand [Installed JREs].

Select [Execution Environments], and then select *JavaSE-1.6*. See Figure 40.

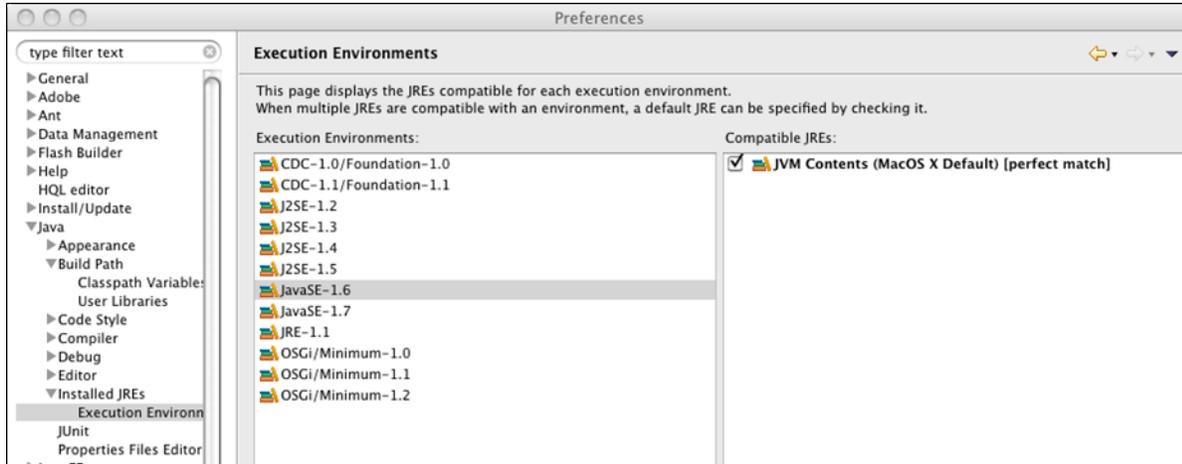


Figure 39

MAC OS: Select [JVM Contents (MacOS X Default)] as the default JRE

Windows: Select [jre6] as the default JRE

Click [OK] to save the setting.

5.11.7 JBoss Application Server Configuration in Eclipse

Procedure:

Click on the Java EE Perspective tab. See Figure 41.



Figure 40

If the tab is not showing then click on [Window] -> [Open Perspective] -> [Other...] and select Java EE perspective.

Once the perspective is selected, click the [Servers] tab at the bottom of the window as shown below. See Figure 42.

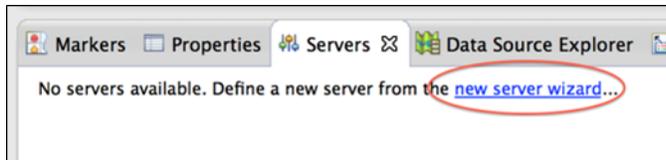


Figure 41

Configuration If the Servers tab is not showing, then click [Windows] -> [Show View] -> [Other...]. In the popup window find [Server], expand, and click on [Servers]. See Figure 43.

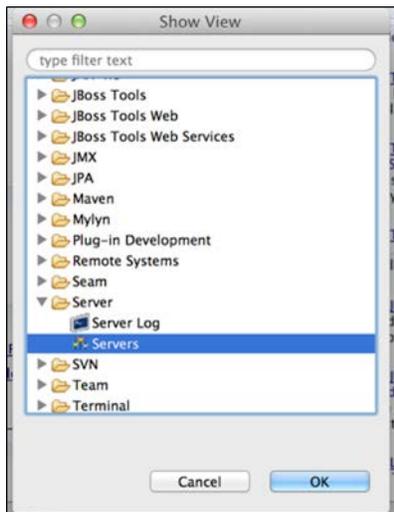


Figure 42

Click the [new server wizard...] link.

Configuration Or right click within the Server tab panel and select New → Server. It does the same thing as clicking the wizard link.

Expand the [JBoss Community] folder, and select [JBoss AS 5.1] as shown. See Figure 44.

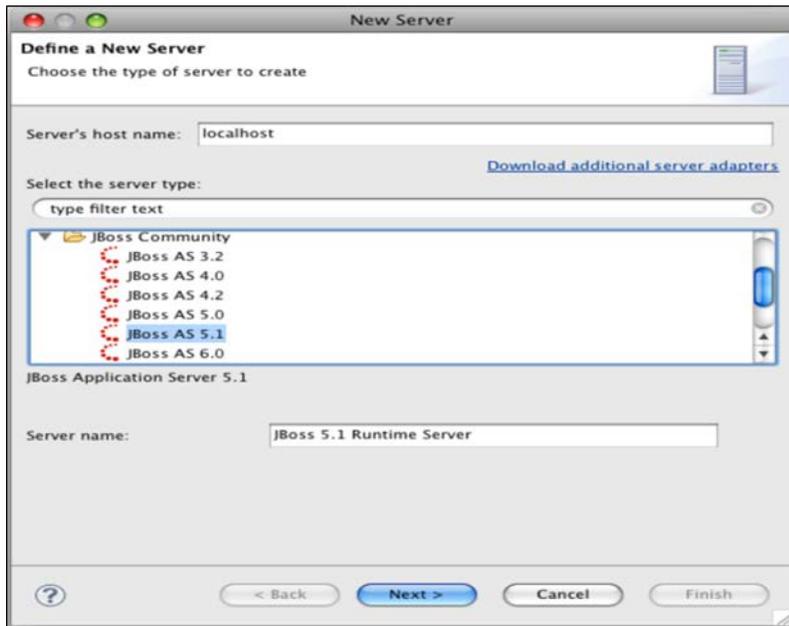


Figure 43

Press [Next] to continue.

Now you need to specify the Home Directory, as shown below.

And confirm that the JRE is set to correct version:

MAC OS: Java SE 6 (MacOS X Default)

Windows: jre6

In Configuration, the Directory will be server.

And make sure “default” is highlighted. See Figure 45.



Figure 44

Click [Finish].

Double click on the new added server name on the server tab to open the properties folder. See Figure 46.

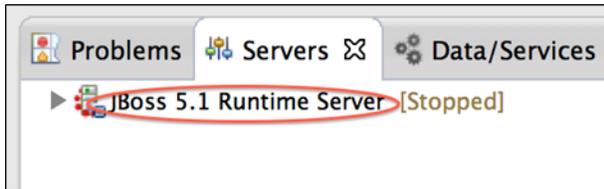


Figure 45

The following window will appear. See Figure 47.



Figure 46

Expand the “publishing” section. Adjust the settings for publishing, setting it to “Never publish automatically”. See Figure 48.

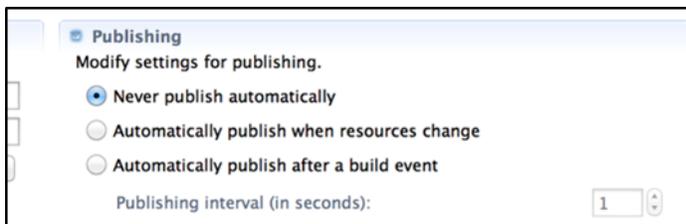


Figure 47

Expand the “timeouts” section. Adjust the settings for timeout, setting start value to *999*, setting stop value to *001*. See Figure 49.

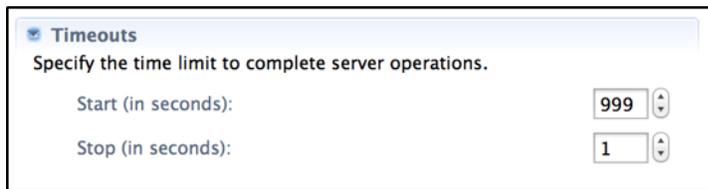


Figure 48

Save the settings before continuing.

Click on the [Deployment] tab at the bottom of the JBoss Overview window.

Set the option for “Use the JBoss deploy folder”. See Figure 50.

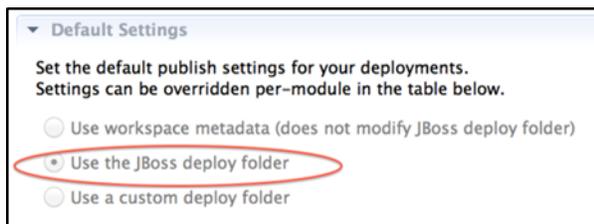


Figure 49

Make sure the “Deploy projects as compressed archives” is checked. See Figure 51.

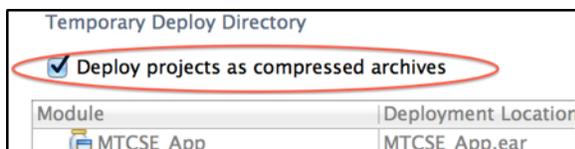


Figure 50

[Save] the settings to complete this task.

5.11.8 Clean Up the JBoss Server Directory

Procedure:

Look in the File system under the JBoss installation directory:

```
/EclipseWorkbench/jboss-5.1.0.GA/server/default
```

Look for a file or a directory named: ROOT.war. If that file or directory exists you must delete it.

Caution ROOT.war must be deleted if it exists. Otherwise you will get a Deployment Exception later in the process

5.11.9 Initial Flex Configuration

Procedure

Navigate to the [Eclipse] → [Preferences] screen.

Then expand Flash Builder. See Figure 52.

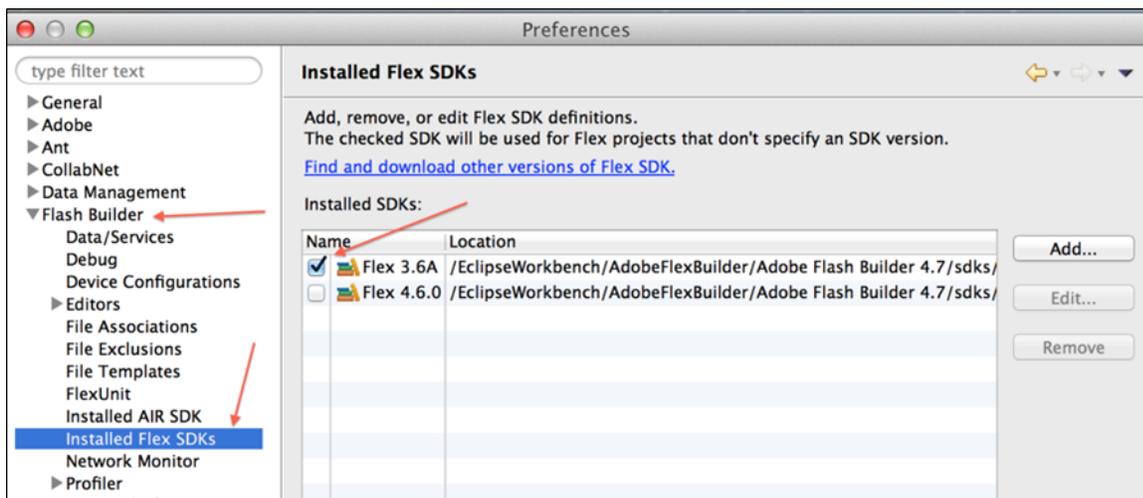


Figure 51

Click on [Installed Flex SDKs]. Make sure that Flex 3.6A is selected.

[Apply]. Click [OK].

Caution Do not select Flex4.6 as MTS is not ready to migrate to 4.6.

5.12 Connect to MTS Subversion Repository

The next step is to checkout code from the SVN.

This sub-process requires connection to the SVN and checkout code from the **devl** branch. Remember that the Eclipse workspace being used is in

/EclipseWorkbench/workspaces/devl.

Configuration

If you want to checkout test or production code, switch workspace to:

/EclipseWorkbench/workspaces/prod (For Production) or

/EclipseWorkbench /workspaces/test (Test Code).

You will require a username and password to connect to the repository. If you do not have one, please contact the SVN administrator.

Procedure:

Open the SVN Repository Exploring Perspective by selecting [*Window*] from the menu bar. Select [*Open Perspective*] → [*Other..*].

Choose SVN Repository Exploring. See Figure 53.

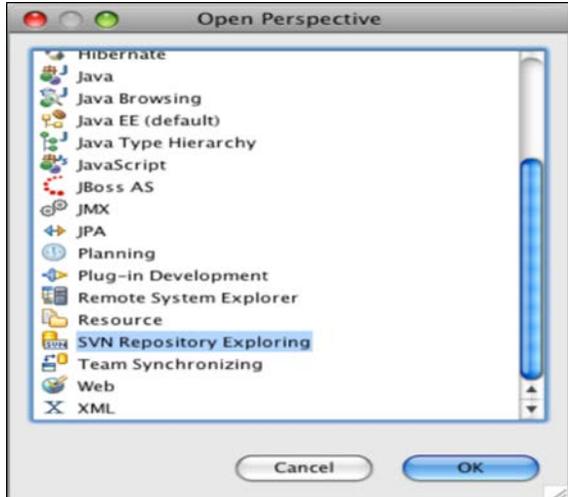


Figure 52

This will cause a new tab to show up in the Workspace. See Figure 54.

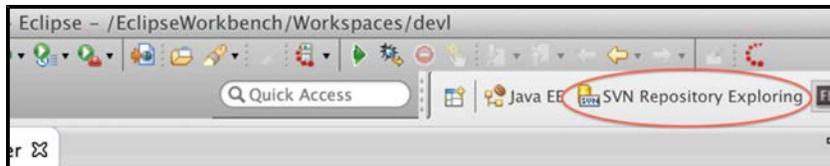


Figure 53

You will automatically be directed to this window. See Figure 55.

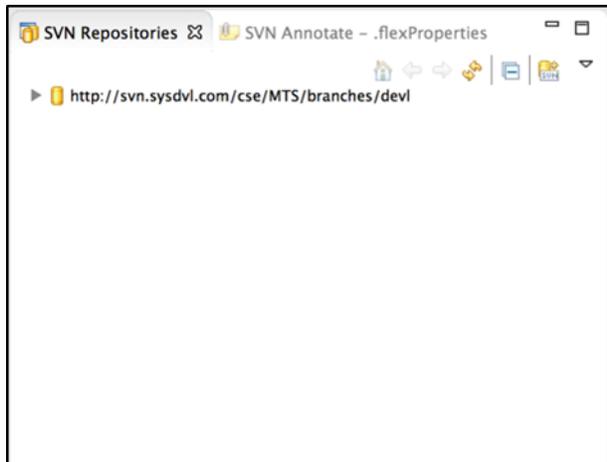


Figure 54

Right click within the SVN Repositories panel and select [New] → [Repository Location...].

Enter the SVN URL to checkout code from devl.

Contact MTS Technical Support for the location of the current MTS Repository.

See Figure 56 (This is a sample only).

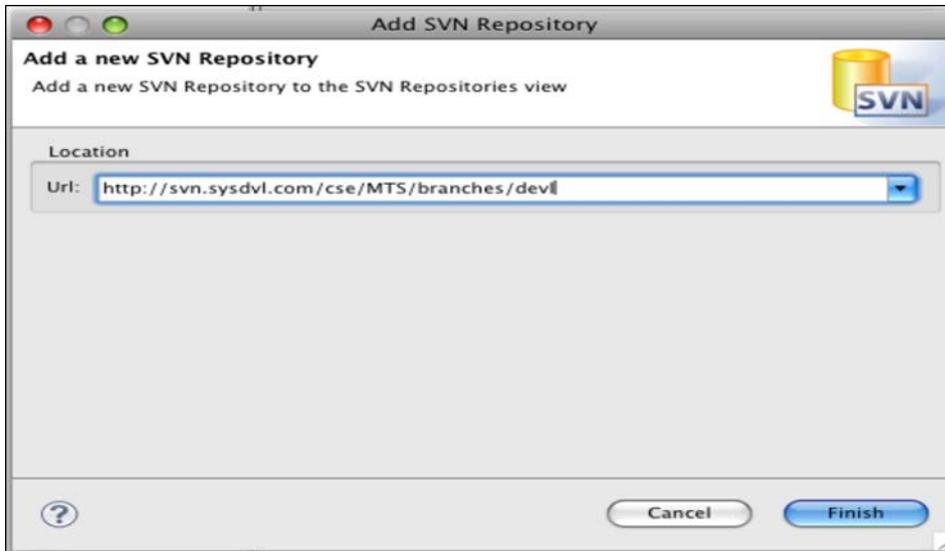


Figure 55

It will ask for your username and password. If you do not have one, please contact MTS Technical Support.

Expand the newly added repository under the SVN Repositories tab as shown in Figure 57.

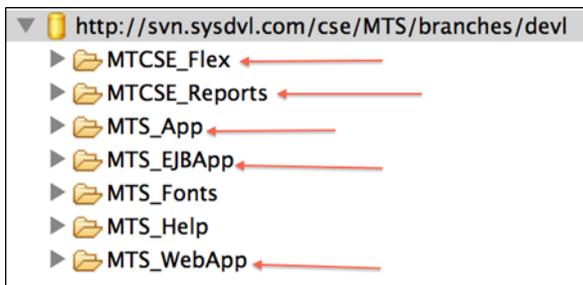


Figure 56

To continue, select MTS_APP, MTS_EJBApp, MTS_WebApp, MTCSE_Flex, and MTCSE_Reports from the list and right-click and [Checkout]. See Figure 58.

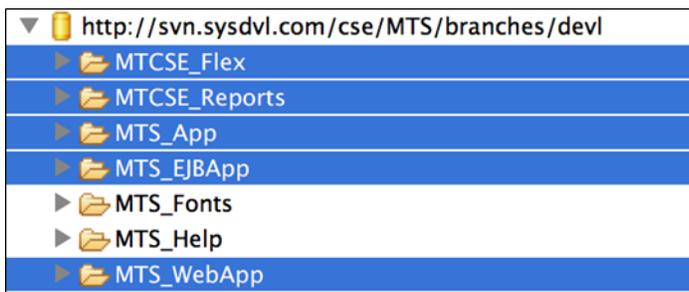


Figure 57

You will be presented the Checkout Dialog box. See Figure 59

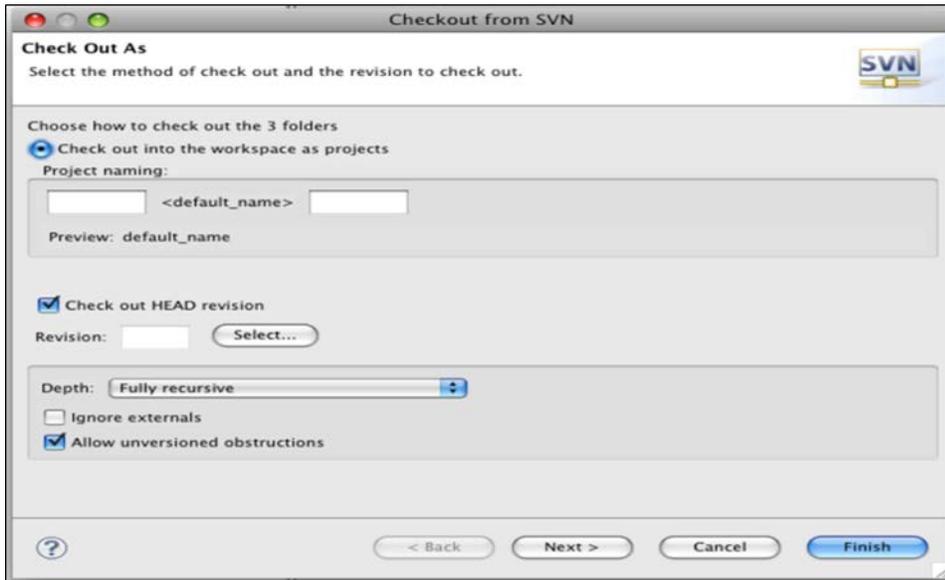


Figure 58

Click [Finish] to checkout code.

You will see the progression of the code being checked out. See Figure 60.

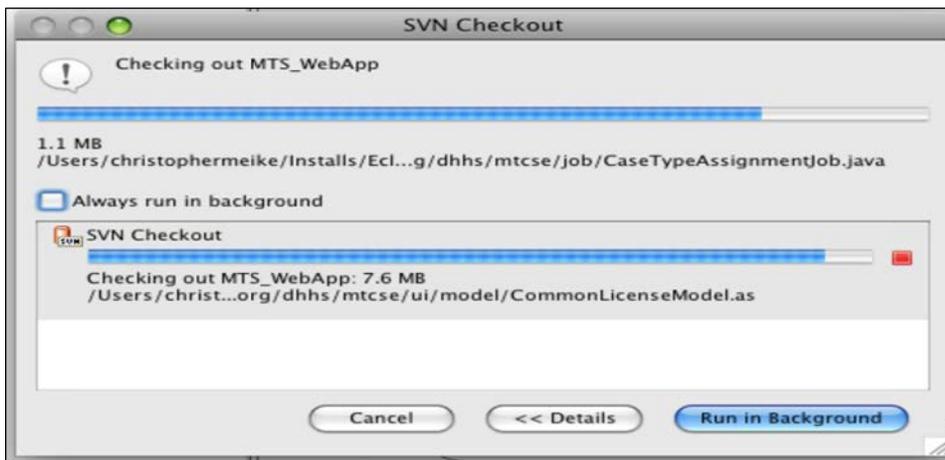


Figure 59

This step may take some time. (5-10 minutes, depending on network and computer speeds)

5.13 Set-up of Runtime Dependent Jar Files

Certain jar files/libraries are required to develop and run the application. This sub-process will provide you with the base files that will need to be setup.

Procedure

In the EclipseWorkbench folder, create a folder named SVNco_tobedeleted.

Login to Alfresco server <http://cms.sysdvl.com/alfresco/>, then obtain the following zip file: *env_script.zip* found at:

Company Home > 1 Model Tribal System > 2 MTS Systems Documentation > 9 Development > Configuration Files.

Place the scripts.zip file under the SVNco_tobedeleted folder and uncompress/unzip.

You should see a structure that looks like Figure 61 when completed.

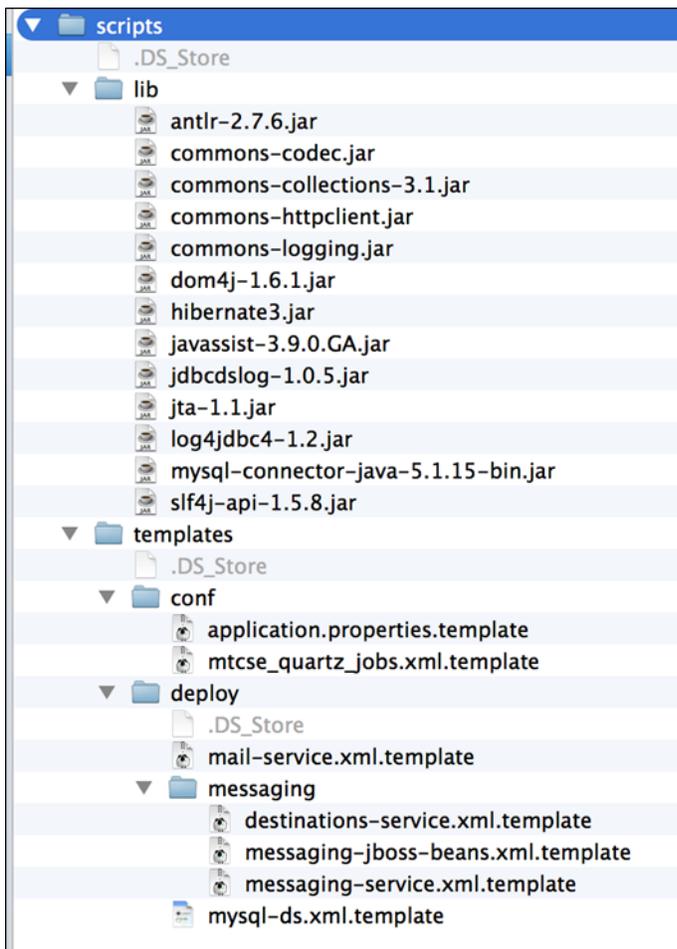


Figure 60

Once the checkout process has completed, copy all the jar files.

File Copy:

/EclipseWorkbench /SVNco_tobedeleted/scripts/lib/

to

/EclipseWorkbench /jboss-5.1.0.GA/server/default/lib

This will take care of the Hibernate, common, and MySQL jars that are required. Those libraries are NOT bundled in the WAR or EAR file, and are therefore only deployed on the server.

Here is the list as of this publication. See Figure 62

 antlr-2.7.6.jar	443 KB
 commons-codec.jar	47 KB
 commons-collections-3.1.jar	559 KB
 commons-httpclient.jar	215 KB
 commons-logging.jar	55 KB
 dom4j-1.6.1.jar	314 KB
 hibernate3.jar	2.4 MB
 javassist-3.9.0.GA.jar	597 KB
 jdbcdslog-1.0.5.jar	33 KB
 jta-1.1.jar	13 KB
 log4jdbc4-1.2.jar	65 KB
 mysql-connector-java-5.1.15-bin.jar	786 KB
 slf4j-api-1.5.8.jar	23 KB

Figure 61

Ensure all required files are listed before continuing to the next sub-process.

Close eclipse.

Configuration

If you do not have access to the Alfresco directory above, then you can find all these jar files on the internet by using the tool:

<http://www.jarfinder.com/index.php/jars>

5.14 Update Flex SDK Settings in Files

We now need to adjust the settings of two files before we proceed:

Procedure:

Caution Make sure Eclipse is closed!!

In your terminal/command window go to:

```
/EclipseWorkbench/Workspaces/devl/MTCSE_Flex
```

Then edit the following file: *.actionScriptProperties*

Caution When editing files, make sure you use an editor that will not introduce invisible characters. It is best to use either vi on the MAC or Notepad on Windows. On Windows you may wish to change your settings on whether or not extensions are hidden on files.

Find the reference to `flexSDK="Flex 3.6"` and change it to `flexSDK="Flex 3.6A"` if necessary

See Example Figure 63.

```

version="1.0" encoding="UTF-8"?>
onScriptProperties analytics="false" mainApplicationPath="main.mxml" v
>
mpiler additionalCompilerArguments="-locale en_US -managers flash.font
anager flash.fonts.BatikFontManager flash.fonts.AFEFontManager" autoRS
"false" copyDependentFiles="true" flexSDK="Flex 3.6A" fteInMXComponent
generateAccessible="false" htmlExpressInstall="true" htmlGenerate="tru
toryManagement="true" htmlPlayerVersionCheck="true" includeNetmonSwc="
putFolderPath="WebContent" rootURL="http://localhost:8080/MTCSE_WebApp
lderPath="flex_src" strict="true" targetPlayerVersion="0.0.0" useApoll
alse" useDebugRSLswfs="true" verifyDigests="true" warn="true">
compilerSourcePath/>
libraryPath defaultLinkType="1">
<libraryPathEntry kind="4" path=""/>
<libraryPathEntry kind="1" linkType="1" path="flex_libs"/>
/libraryPath>
sourceAttachmentPath/>
ompiler>
plications>
application path="main.mxml"/>

```

Figure 62

Then go to:

```
/EclipseWorkbench/Workspaces/devl/MTCSE_Flex/.settings
```

And edit the file: *com.adobe.flexbuilder.project.prefs*

Change the line from `upgradeSDK/fb4=Flex 3.6` to `upgradeSDK/fb4=Flex 3.6A` if necessary

5.15 Adjust Project Settings

Procedure:

Open Eclipse, and go to the Java EE Perspective. See Figure 64.



Figure 63

Next, go to the Project Explorer. See Figure 65.

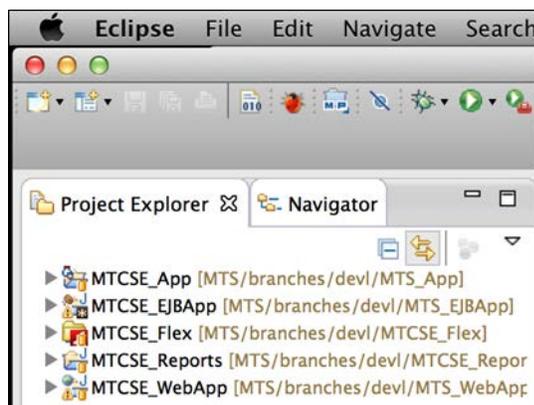


Figure 64

5.15.1 MTCSE_EJBApp

In the J2EE perspective, right-click on MTCSE_EJBApp and click [Properties].

In the properties dialog window, right click on “MTCSE_EJBApp” and select [properties].

Then select Java Build Path.

Click on [Libraries].

Click on [Add External Jars].

Select all the Jars under: `/EclipseWorkbench/jboss-5.1.0.GA/server/default/lib` (See Figure 66).

Then click [Open].

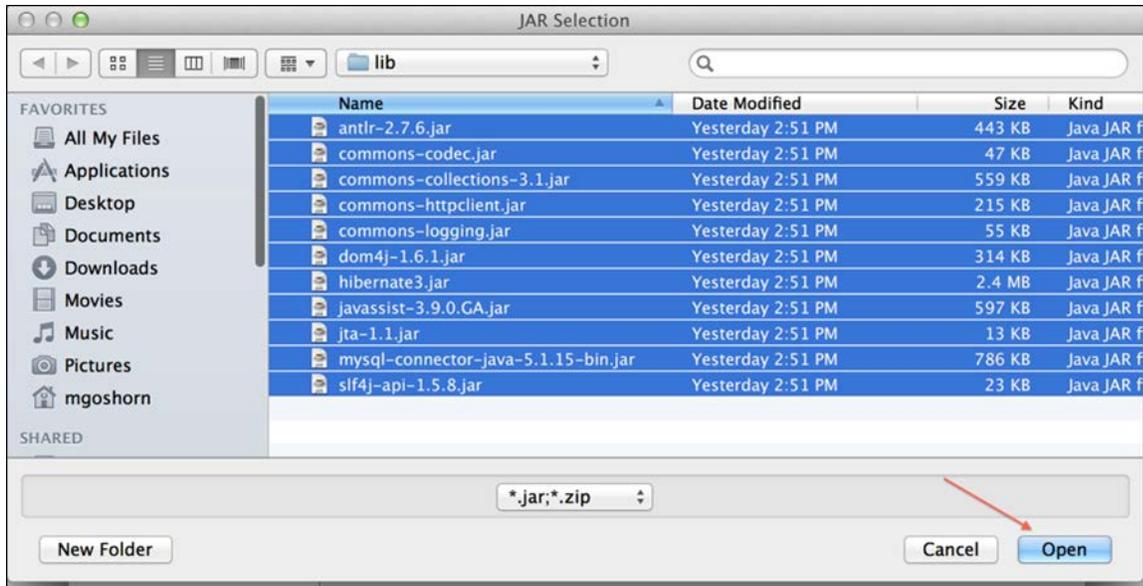


Figure 65

Next resolve any Java conflicts:

Again under the Libraries section, select “JRE System Library...” and click [Edit...].

See Figure 67.

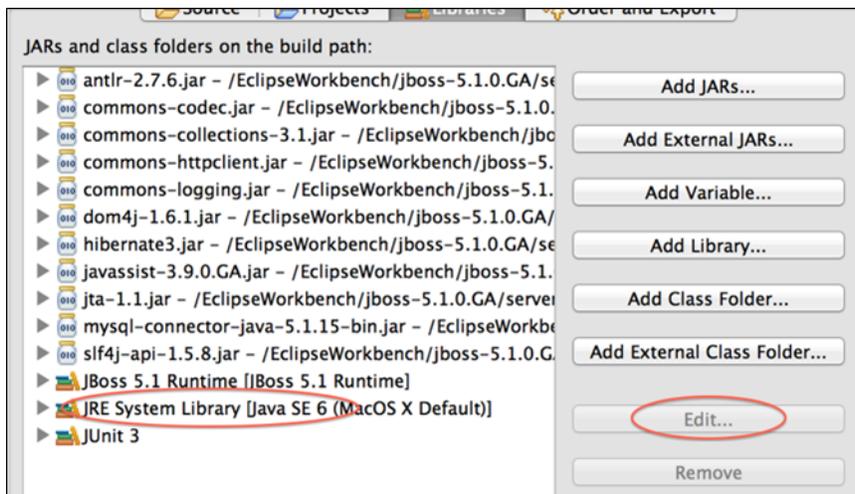


Figure 66

For the JRE System Library, select the Workspace default radio button.

See Figure 68.

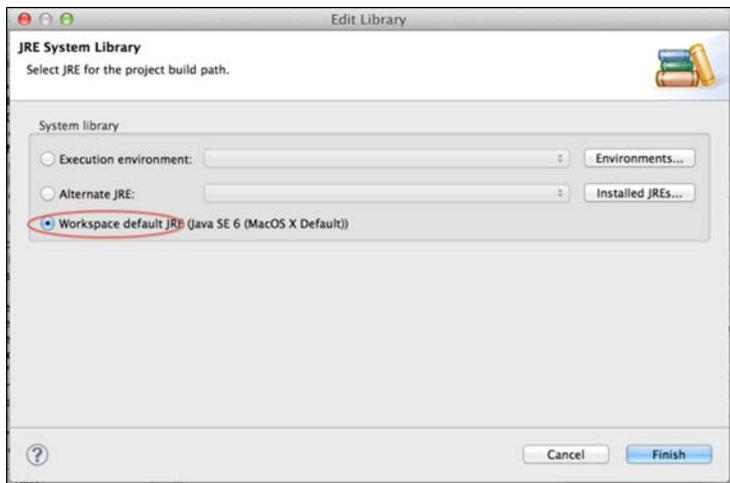


Figure 67

Click [Finish].

Click on [Targeted Runtimes] and set it to the JBoss 5.1 Runtime. See Figure 69.

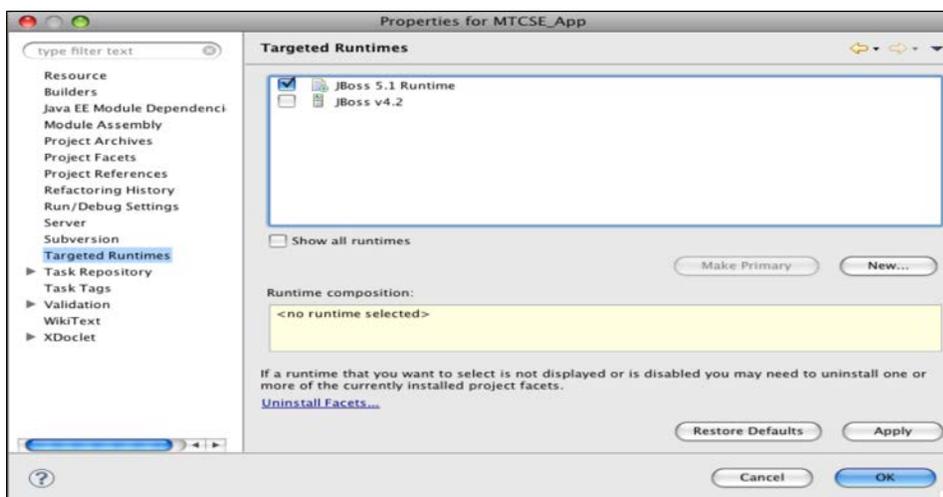


Figure 68

Click [Apply]

Click on [Server]. Set the Server to JBoss 5.1 Runtime Server.

See Figure 70.

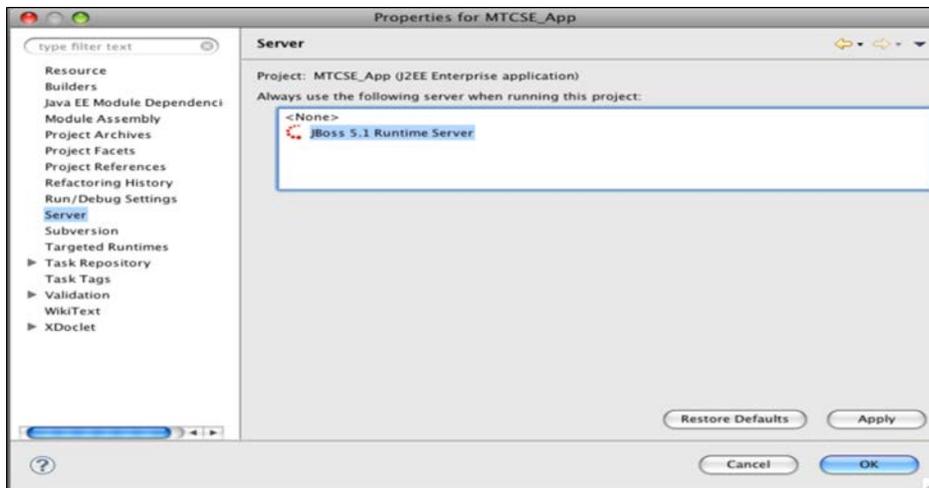


Figure 69

Click [Apply].

Click [OK].

5.15.2 MTCSE_App

In the J2EE perspective, right-click on MTCSE_App and click [Properties].

In the properties Dialog window, click on [Targeted Runtimes] and set it to the JBoss 5.1 Runtime. See Figure 69.

Click [Apply].

Click on [Server]. Set the Server to JBoss 5.1 Runtime Server.

See Figure 70.

Click [Apply].

Click on [Java Build Path]. On right side click [Libraries] tab.

In the window below, it should say [JRE System Library].

Click on that line. The on the right side click [Edit].

On the popup window make sure that it has the [Workspace Default] radial button selected.

Click [Finish].

Click [Apply].

Click [OK].

5.15.3 MTCSE_WebApp

These steps are identical to the ones for MTCSE_EJBApp, except we are making them on the MTCSE_WebApp project.

In the J2EE perspective, right-click on MTCSE_WebApp and click [Properties].

In the properties Dialog window.

Then select Java Build Path.

Click on [Libraries].

Click on [Add External Jars].

Select all the Jars under: /EclipseWorkbench/jboss-5.1.0.GA/server/default/lib (See Figure 66)

Then click [Open].

Next resolve any Java conflicts:

Again under the Libraries section, select “JRE System Library...” and click [Edit...].

See Figure 67.

For the JRE System Library, select the Workspace default radio button.

See Figure 68.

Click [Finish].

Click on [Targeted Runtimes] and set it to the JBoss 5.1 Runtime. See Figure 69.

Click [Apply].

Click on [Server]. Set the Server to JBoss 5.1 Runtime Server.

See Figure 70.

Click [Apply].

Click [OK].

5.15.4 MTCSE_Flex

Procedure:

Right Click on the MTCSE_Flex project [Properties].

In the dialog box, find [Flex Build Path].

See Figure 71.

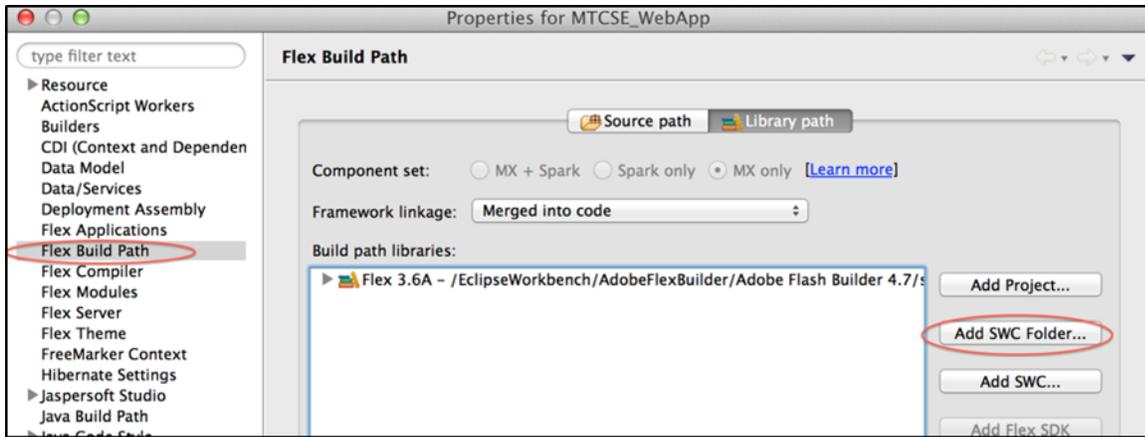
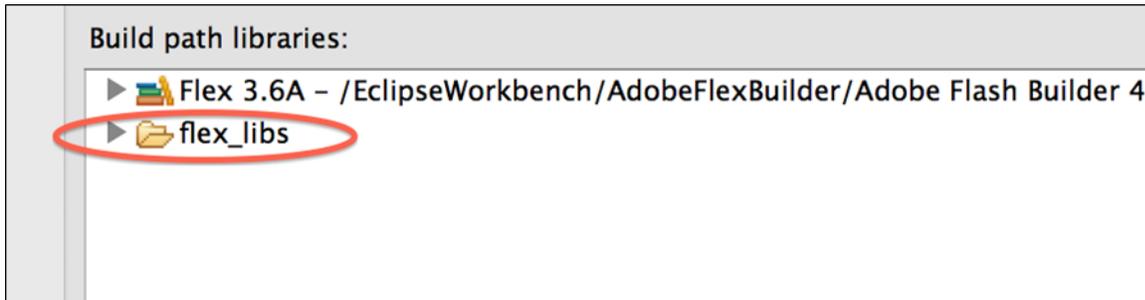


Figure 70

Look to see if the flex_lib folder is listed on the right hand side under the Build path libraries.



If flex_libs is NOT there then follow the following steps:

Click [Add SWC Folder...].

It will display a Browser box. See Figure 72.

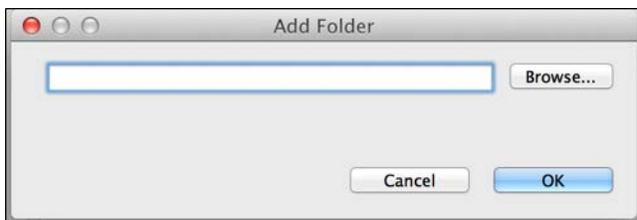


Figure 71

Browse and search for the location of the flex_lib directory under the MTCSE_Flex directory. See Figure 73

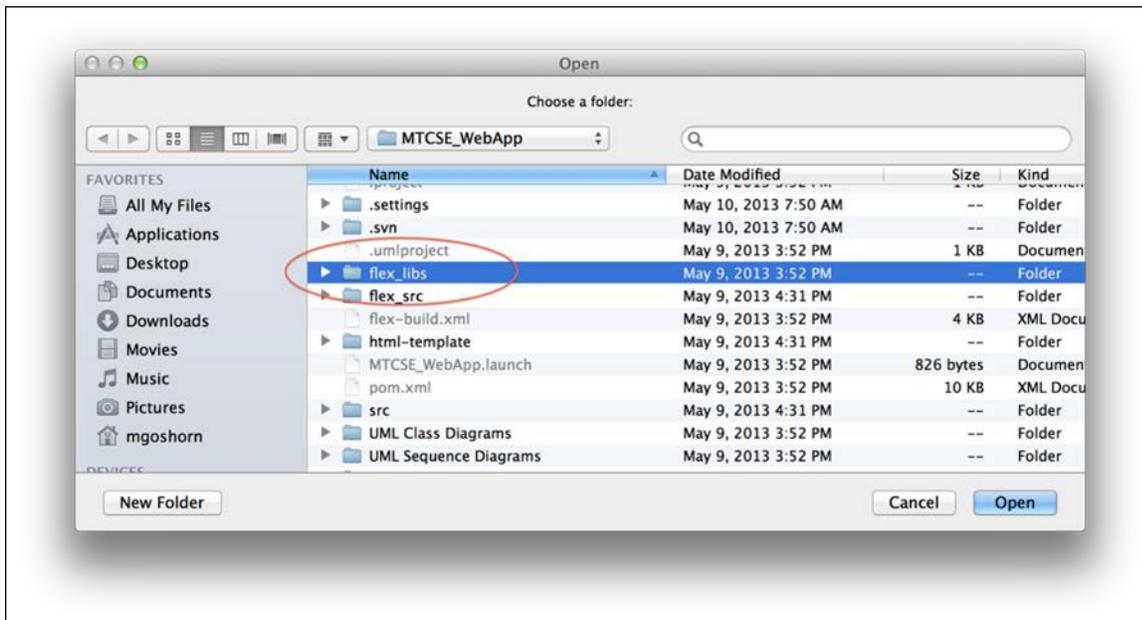


Figure 72

Click [Open]

When done it should look like Figure 74.

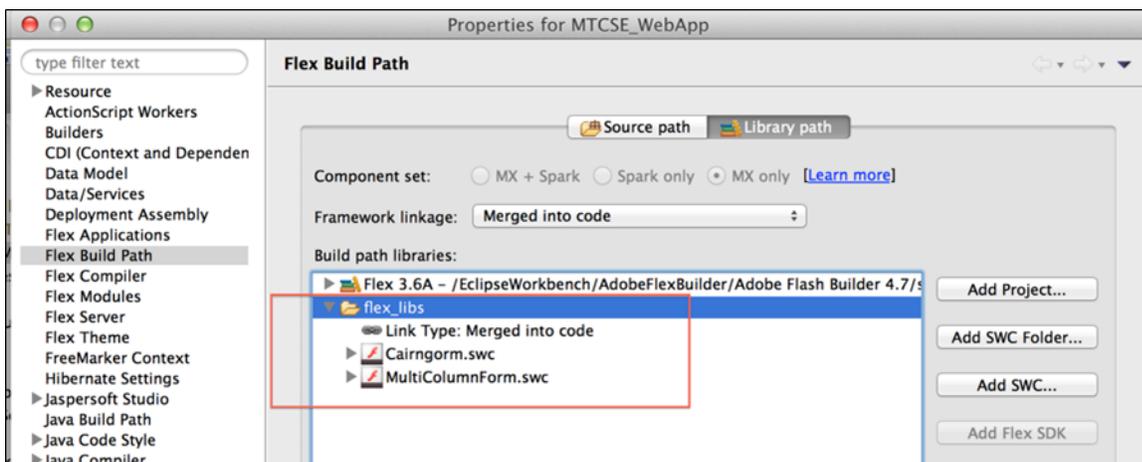


Figure 73

5.15.5 MTCSE_Reports

Right click on MTCSE_Reports -> Properties.

In the properties window, click [Jaspersoft Studio].

Then on the right hand side select the [User Project Settings] radio button.

For the Version select [JasperReports 3.7.5].

And check the box [Show Compatibility warning dialog]. See Figure 75

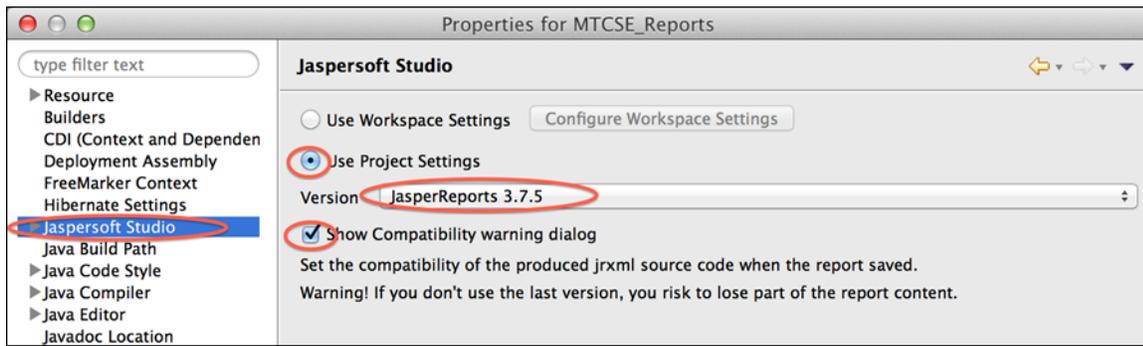
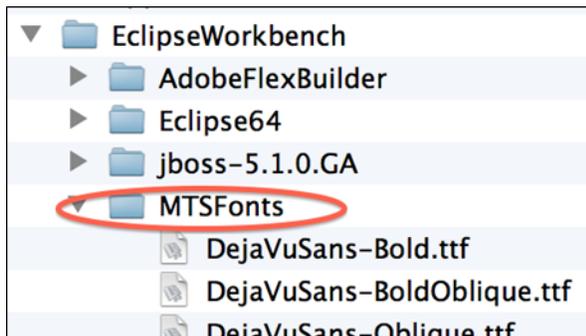


Figure 74

Click [Apply] and then [OK].

Close Eclipse.

Next take the zip file MTSFonts.zip, found under the /EclipseWorkbench/Workspaces/dev1/MTCSE_Reports/studio_files directory, and unzip that directory to /EclipseWorkbench/MTSFonts



5.16 Optional Eclipse Configuration

You may want to make the following additional Eclipse configuration changes.

5.16.1 Turn On Line Number in Editor Windows

Procedure:

Eclipse -> Preferences (MAC OS) or Windows ->Preferences (Windows). In the dialog, under General, find Editors->Text Editors. See Figure 76

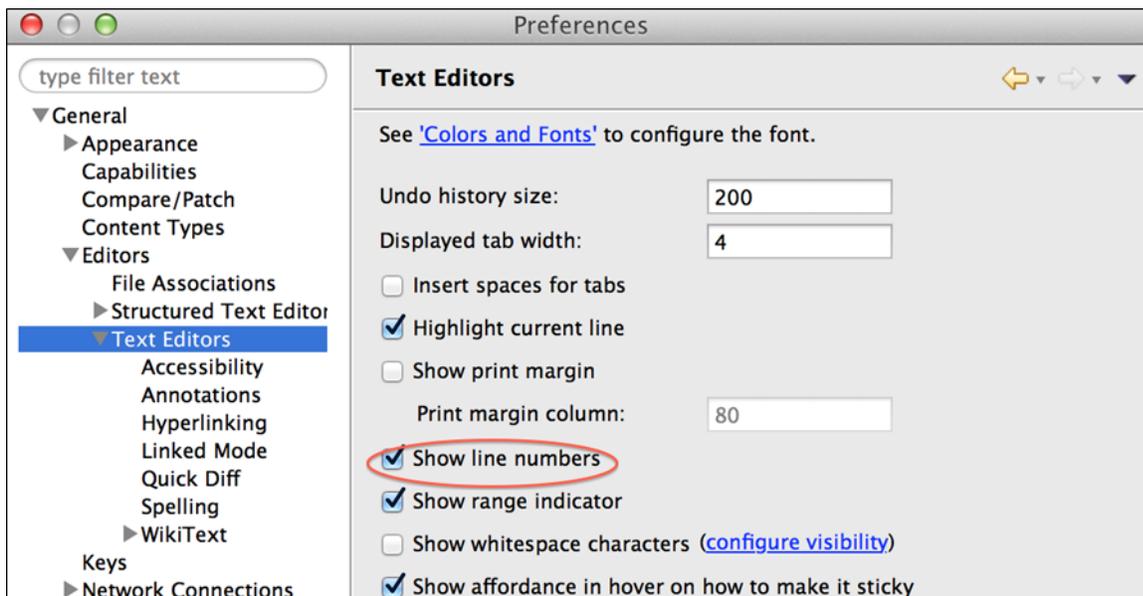


Figure 75

Then check the box next to “Show line numbers”.

Click [OK].

5.16.2 Adjust the Warnings/Errors Displayed

Procedure:

Make sure you are in the [Java EE] Perspective.

Open the Problems View. Select [Windows] -> [Show View] -> [Other...].

Go to [General] -> [Problems].

The problems tab will appear in the bottom of the eclipse application.

In the upper right corner of the Problems window, click on the triangle, then on [Configure Contents...]. See Figure 77.

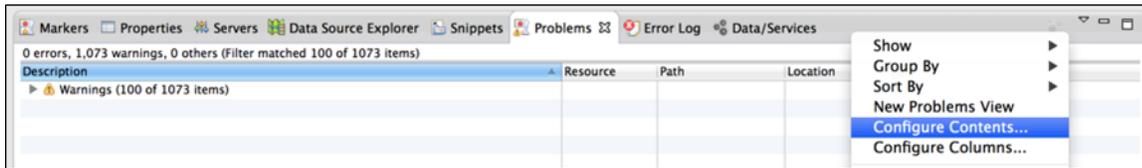


Figure 76

In the pop up that follows, make the following changes. See Figure 78.

Under Configurations, select “Errors/Warning on Project”.

Under Scope, select “On selected element and its children”.

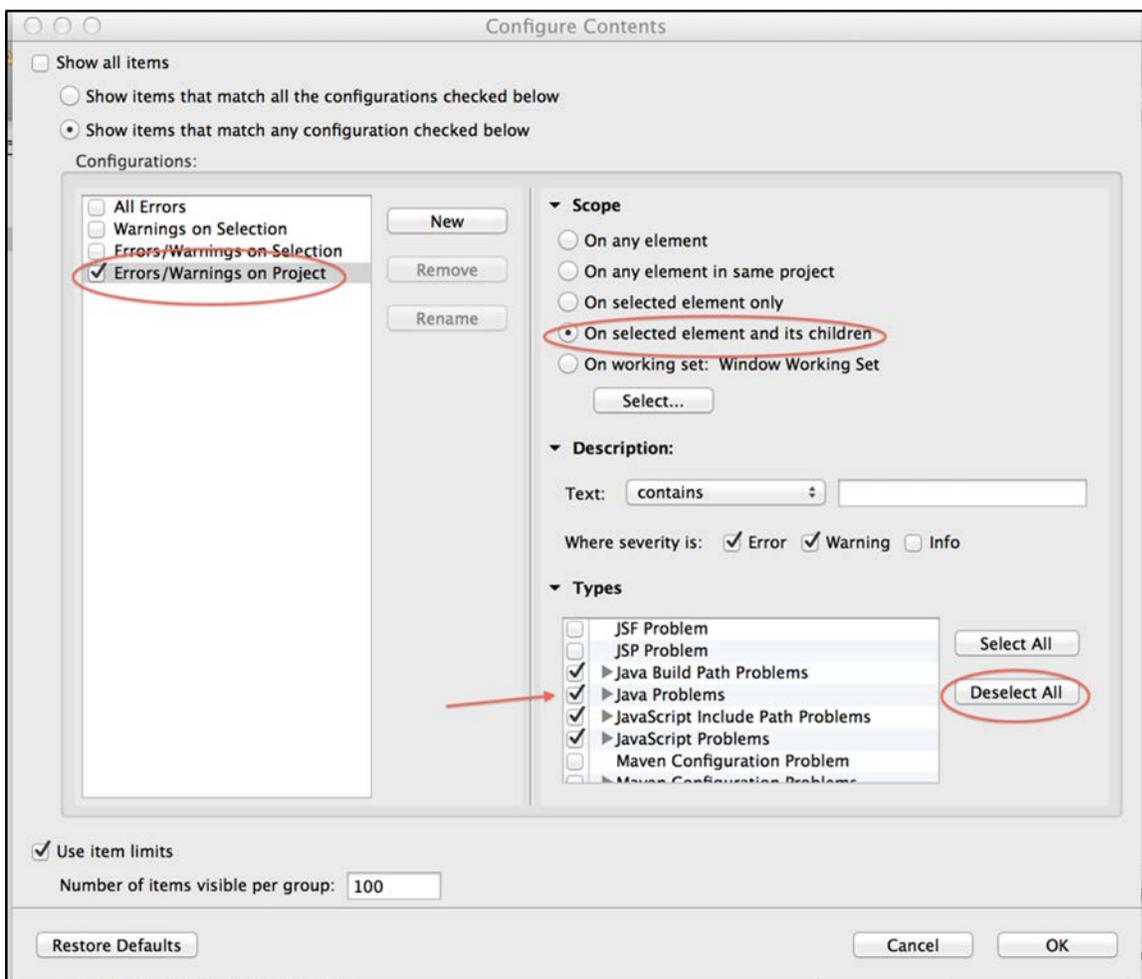


Figure 77

In the “Types” area first [Deselect All].

Then click on only those that begin with Java, Flash, or Flex.

Caution Picture above does not show all the Types you want to select.
Scroll up to find the Flash or Flex types.

When done click [OK]

5.16.3 Adjust Java Compiler Warning

Procedure:

In the Preferences popup window, make adjustments to java -> Java compiler -> Errors/Warnings.

Under the [Generic Types] category:

Change the level of “Unchecked Generic Type Operations” from Warning to Ignore.

Change the level of “Usage of Raw Type” from Warning to Ignore.

See Figure 79.

Click [OK].

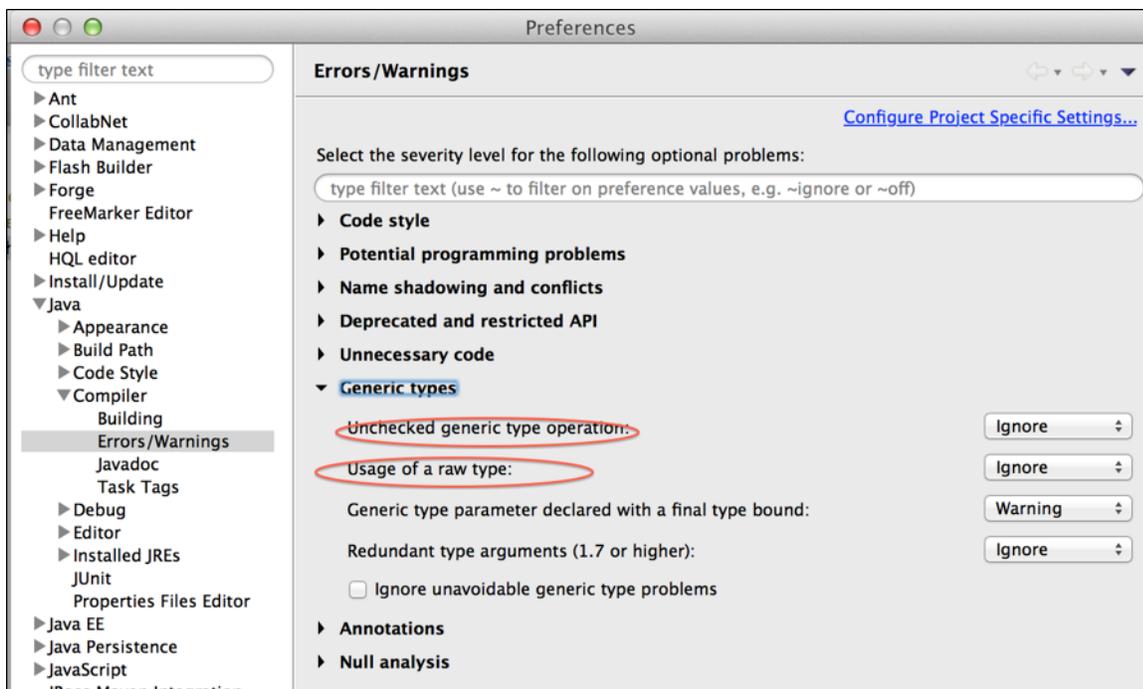


Figure 78

6 Application Configuration

In this section we setup the application, and customize settings like mail preferences, database connections, etc.

Caution

Warning!!

Warning!!

This is not a direct copy. Note that the extension of the files changes from “.xml.template” to just “.xml”

Or “.properties.template” to just “.properties”

Drop the “.template” !!!

6.1 Install Dependent Files for the Application

The primary mechanism is to take templates of properties that you downloaded earlier into the SVNco_toBeDeleted directory, and copy them into the JBoss Server directories. Afterwards, to make any adjustments to the parameters, like passwords, etc.

Procedure

6.1.1 Install Basic Application Properties

File Copy:

```
/EclipseWorkbench/SVNco_toBeDeleted/scripts/templates/conf/applications.properties.template
```

to

```
/EclipseWorkbench/jboss-5.1.0.GA/server/default/conf/application.properties
```

Configuration

Configuration in this file is to support the feature where MTS will send an email to a specified user when an exception is thrown in the log file. If you do not have access to an SMTP server, you can still proceed and launch the application without configuring this file.

Adjust the mail server properties for the application.

Go through the application.properties file and add in the correct values for variables surrounded in %% signs. For example: %smtp_server% would become smtp.comcast.net (make sure to replace the %% too!!)

Sample input (words in yellow were modified):

```
# Your Mail Configuration details
SMTP_SERVER=smtp.comcast.net
```

```
MAIL_AUTH_ID=mtsuser
MAIL_PASSWORD=rabbit
MAIL_FROM=mydev@mailinator.com
# Technical Support
TECH_SUPPORT=pinky@brain.com
LOAD_CACHE_ON_STARTUP=true
TRANSPPOST_LOG=false
SEND_MAIL_ON_ERROR=true
```

Meanings of the settings:

SMTP_SERVER = the server that you application can use to send an email.

MAIL_AUTH_ID = the username required for the above server.

MAIL_PASSWORD = the password that goes with the user for the SMPT server.

MAIL_FROM = what mail address should the email sent show in the “from” line. This address does not have to be real, but must be properly formed and meet all the qualifications of an email address.

TECH_SUPPORT = the person or group to which mail will be sent when an error is encountered in the system.

6.1.2 Install Quartz Jobs File

File Copy:

/EclipseWorkbench/SVNco_toBeDeleted/scripts/templates/conf/mtcse_quartz_jobs.xml.template

to

/EclipseWorkbench/jboss-5.1.0.GA/server/default/conf/mtcse_quartz_jobs.xml

Modification of this file is NOT necessary.

File Copy: */EclipseWorkbench/SVNco_toBeDeleted/scripts/templates/conf/jbossts-properties.xml.template*

to

/EclipseWorkbench/jboss-5.1.0.GA/server/default/conf/jbossts-properties.xml

Modification of this file is NOT necessary.

6.1.3 Install Messaging Service

File Copy:

/EclipseWorkbench/SVNco_toBeDeleted/scripts/templates/deploy/messaging/messaging-service.xml.template

to

/EclipseWorkbench/jboss-5.1.0.GA/server/default/deploy/messaging/messaging-service.xml.

Modification of this file is NOT necessary.

However you should be aware that there is a password in this file for the configuration of the JBoss messaging service.

```

name="ClusterPullConnectionFactoryName">jboss.messaging.connectionfactory:service=ClusterPullConnectionFact
<!-- When redistributing messages in the cluster. Do we need to preserve the order of messages received
by a particular consumer from a particular producer? -->
<attribute name="DefaultPreserveOrdering">false</attribute>
<!-- Max. time to hold previously delivered messages back waiting for clients to reconnect after failure -->
<attribute name="RecoverDeliveriesTimeout">300000</attribute>
<!-- Set to true to enable message counters that can be viewed via JMX -->
<attribute name="EnableMessageCounters">false</attribute>
<!-- The password used by the message sucker connections to create connections.
THIS SHOULD ALWAYS BE CHANGED AT INSTALL TIME TO SECURE SYSTEM -->
<attribute name="bandit"></attribute>
-->
<!-- The name of the server aspects configuration resource -->
<attribute name="ServerAopConfig">aop/jboss-aop-messaging-server.xml</attribute>
-->
<!-- The name of the client aspects configuration resource -->
<attribute name="ClientAopConfig">aop/jboss-aop-messaging-client.xml</attribute>

```

Figure 79

6.1.4 Install Configuration for Message Labels

File Copy: */EclipseWorkbench/SVNco_toBeDeleted/scripts/templates/deploy/messaging/messaging-jboss-beans.xml.template*

to

/EclipseWorkbench/jboss-5.1.0.GA/server/default/deploy/messaging/messaging-jboss-beans.xml.

Modification of this file is NOT necessary; however you should be aware that there is a password in this file for the configuration of the JBoss messaging service.

Make sure that the password entered here matches the password for the *messaging-service.xml* file above.

```
<property name="suckerPassword">bandit</property>
```

File Copy: /EclipseWorkbench/SVNco_toBeDeleted/scripts/templates/ deploy/messaging/destinations-service.xml.template

to

/EclipseWorkbench/jboss-5.1.0.GA/server/default/ deploy/messaging/destinations-service.xml.

Modification of this file is NOT necessary.

6.1.5 Configuring the MySQL and Mail Services

File Copy: /EclipseWorkbench/SVNco_toBeDeleted/scripts/templates/ deploy/mysql-ds.xml.template

to

/EclipseWorkbench/jboss-5.1.0.GA/server/default/ deploy/mysql-ds.xml.

Modification: Modify the mysql-ds.xml file to support connectivity to the local DBMS by changing the values for database username and password, and database name to match what has been setup for your database.

We will also configure to use an XA datasource instead of a local tx datasource.

In this exercise we will name the database “mts” the username we will keep as “root” and the password will be your root password for the MySQL database.

So your file should look like this:

```

<xa-datasource>
  <jndi-name>MySqlDS</jndi-name>
  <min-pool-size>5</min-pool-size>
  <max-pool-size>100</max-pool-size>
  <xa-datasource-class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-
datasource-class>
  <xa-datasource-property name="URL">jdbc:mysql://localhost:3306/mts</xa-
datasource-property>
  <xa-datasource-property name="User">root</xa-datasource-property>
  <xa-datasource-property name="Password">Bandit99</xa-datasource-property>
</xa-datasource>

```

Figure 80

Use the password that you used instead of “Bandit99”.

Caution Put the password you created for your MySQL root account in as the password!

6.1.6 Install Mail Service Configuration

File Copy: /EclipseWorkbench/SVNco_toBeDeleted/scripts/templates/mail-service.xml.template

to

/EclipseWorkbench/jboss-5.1.0.GA/server/default/deploy/mail-service.xml.

Modification: Modify the mail-service.xml to support connectivity to the current mail server and SMTP user authentication.

Configuration Configuration in this file is to support the feature of sending documents or reports to a user. If you do not have access to an SMTP server, then you can skip this section and just will not be able to email a report.

A sample follows: (words in yellow were modified)

```

<configuration>
  <!-- Change to your mail server protocol -->
  <property name="mail.store.protocol" value="pop3"/>

```

```
<property name="mail.transport.protocol" value="smtp"/>
<!-- Change to the user who will receive mail -->
<property name="mail.user" value="pinky@brain.com"/>
<!-- Change to the mail server -->
<property name="mail.pop3.host" value="pop.comcast.net"/>
<!-- Change to the SMTP gateway server -->
<property name="mail.smtp.host" value="smtp.comcast.net"/>

<!-- The mail server port -->
<property name="mail.smtp.port" value="25"/>

<!-- Change to the address mail will be from -->
<property name="mail.from" value="mydev@mailinator.com"/>
<!-- Enable debugging output from the javamail classes -->
<property name="mail.debug" value="false"/>
</configuration>
```

6.2 Install MySQL 5.1

Caution Perform these steps to **upgrade** to MySQL 5.1. If you are currently running MySQL 5.1 or greater, then do not perform these steps.

Of course, if you don't have MySQL installed you won't be able to do this.

To find what version of MySQL is running:

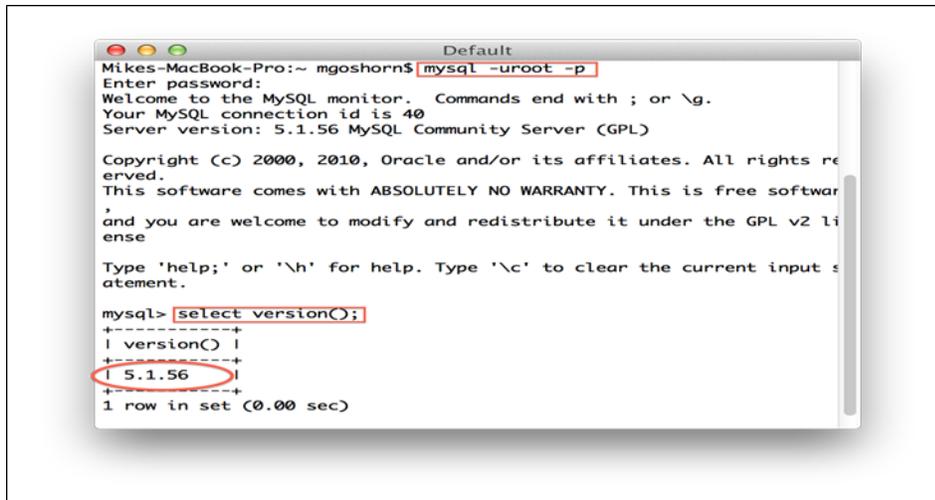
- Login to MySQL from command prompt

```
mysql -uroot -p
```

- You will be prompted for the password
- Execute query

```
SELECT version();
```

See Figure 82



```
Default
Mikes-MacBook-Pro:~ mgoshorn$ mysql -uroot -p
Enter password:
Welcome to the MySQL monitor.  Commands end with ; or \g.
Your MySQL connection id is 40
Server version: 5.1.56 MySQL Community Server (GPL)

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and you are welcome to modify and redistribute it under the GPL v2 license

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.

mysql> select version();
+-----+
| version() |
+-----+
| 5.1.56    |
+-----+
1 row in set (0.00 sec)
```

Figure 81

6.2.1 Uninstall MySQL (only if installed previously with a lower version)

Procedure:

First backup your database using the following command. For all databases (from the /usr/local/mysql/bin directory):

```
mysqldump -u username -ppassword --all-databases > [filename].sql
```

or, for multiple databases

```
mysqldump -u username -ppassword --databases db_name1 [db_name2 ...] > [filename].sql
```

or for a single database

```
mysqldump -u username -ppassword database_name > [filename].sql
```

Caution Make sure to write the dump files to a location outside of the /usr/local/msql directory structure, as we will be deleting that directory structure.

6.2.1.1 Shutdown MySQL

6.2.1.1.1 MAC OS

Use System Preferences or using the following command:

```
sudo /usr/local/mysql/bin/mysqladmin -uroot -p shutdown
```

6.2.1.1.2 Windows

Use The Services.

6.2.1.2 Delete the MySQL files from the various directories

6.2.1.2.1 MAC OS

Using the terminal execute the following commands:

```
sudo rm /usr/local/mysql
sudo rm -rf /usr/local/mysql*
sudo rm -rf /Library/StartupItems/MySQLCOM
sudo rm -rf /Library/PreferencePanes/My*
(Edit /etc./hostconfig) sudo vi /etc./hostconfig (Remove line MYSQLCOM=-YES)
sudo rm -rf /Library/Receipts/mysql*
sudo rm -rf /Library/Receipts/MySQL*
sudo rm -rf /var/db/receipts/com.mysql.*
```

6.2.1.2.2 Windows

Use the MySQL Installation tool. This will automatically remove old database files.

6.2.2 Install MySQL

6.2.2.1 MAC OS

Choose the DMG file to download for your Mac (we assume the 64 bit for MAC OS X 10.6 or higher).

Execute the DMG file to load the disk image. Within the MySQL disk image, run the mysql-5.1.56-osx10.6-x86_64.pkg package to install MySQL. See Figure 83

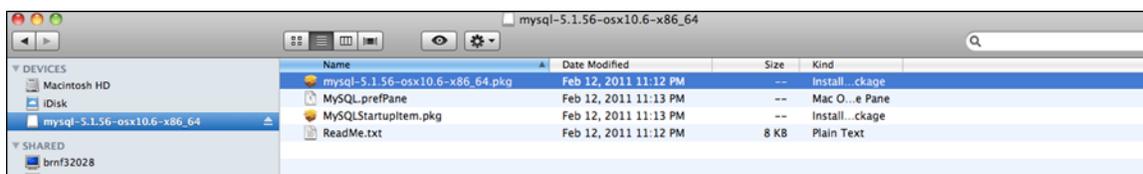


Figure 82

Follow the wizard to complete the install of MySQL.

Once the install is complete, run the MySQLStartupItem.pkg package to allow MySQL to start on system startup.

Double click [MySQL.prefPane] to install the preference pane MySQL monitor.

6.2.2.2 Windows

Use the mySql installation tool. And Allow it to [Run] (See Figure 84)

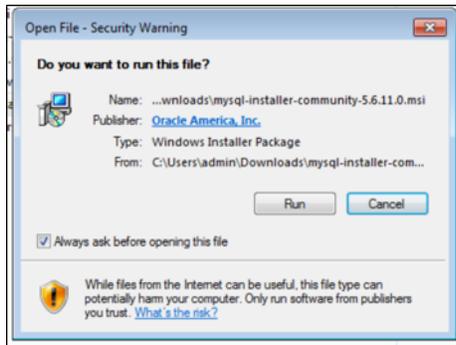


Figure 83

Confirm permission to run the tool. Click [Yes].

See Figure 85.



Figure 84

Install will automatically launch the WebInstaller tool.

You may have to confirm permission to run this tool. If you do then just click [Yes].

See Figure 86.

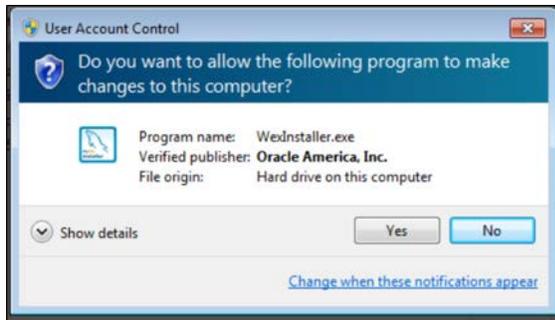


Figure 85

The system will take some time to evaluate current conditions. See Figure 87.

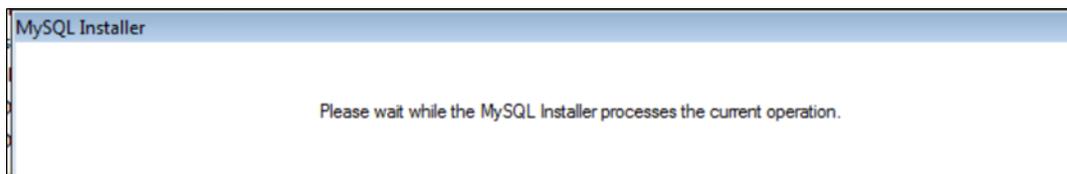


Figure 86

6.2.2.2.1 No Previous MySQL products on system

If you have never installed any MySQL applications on your system you will see the following window appear. See Figure 88.

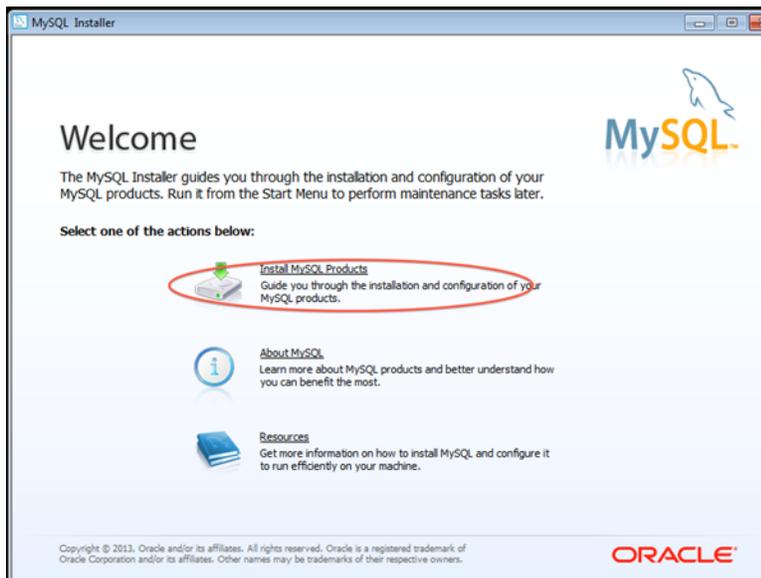


Figure 87

Click on the [Install MySQL Products] link.

If you see a different window then skip this section and proceed to section 6.2.2.2 below. It will ask you to agree to the license. See Figure 89.

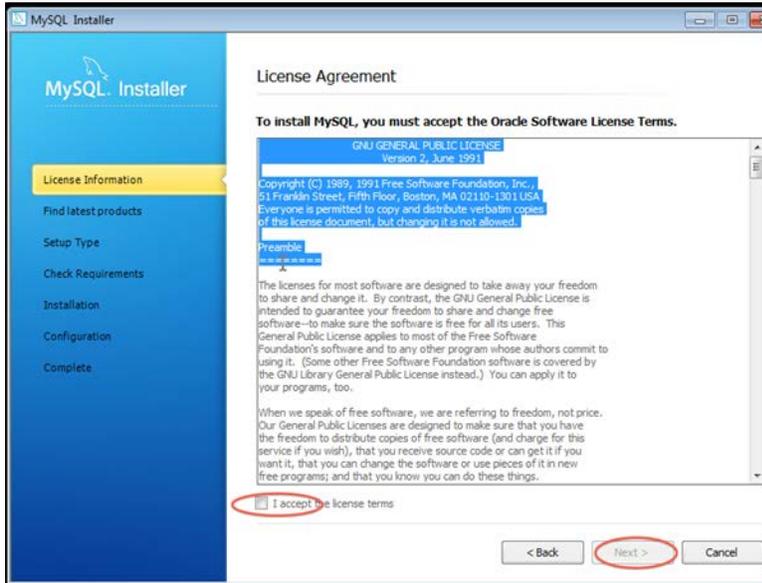


Figure 88

Next it will want to look for updates. See Figure 90. Just click the checkbox next to [Skip] and then click [Execute].

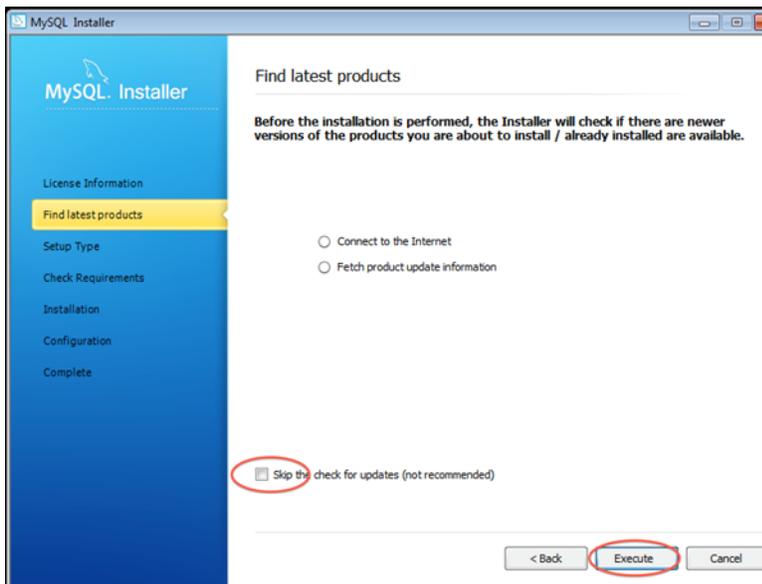


Figure 89

Next it will want you to configure some setup parameters, See Figure 91. Click the [Custom] radial button, and change the path for the Data to 5.1 instead of 5.6.

Before:

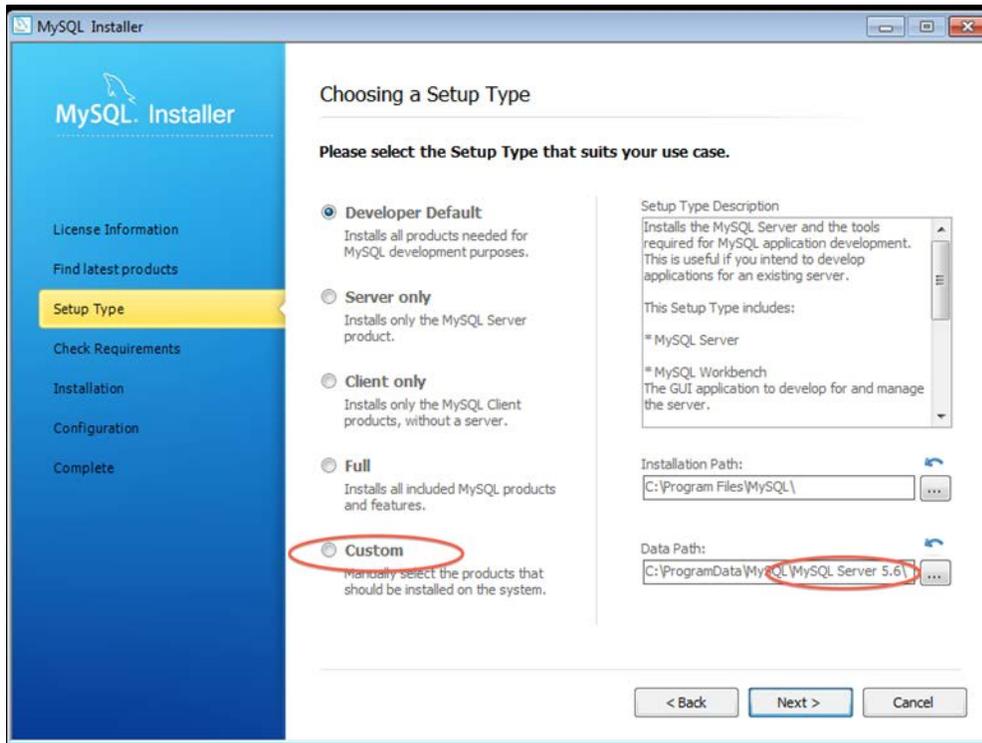


Figure 90

After:

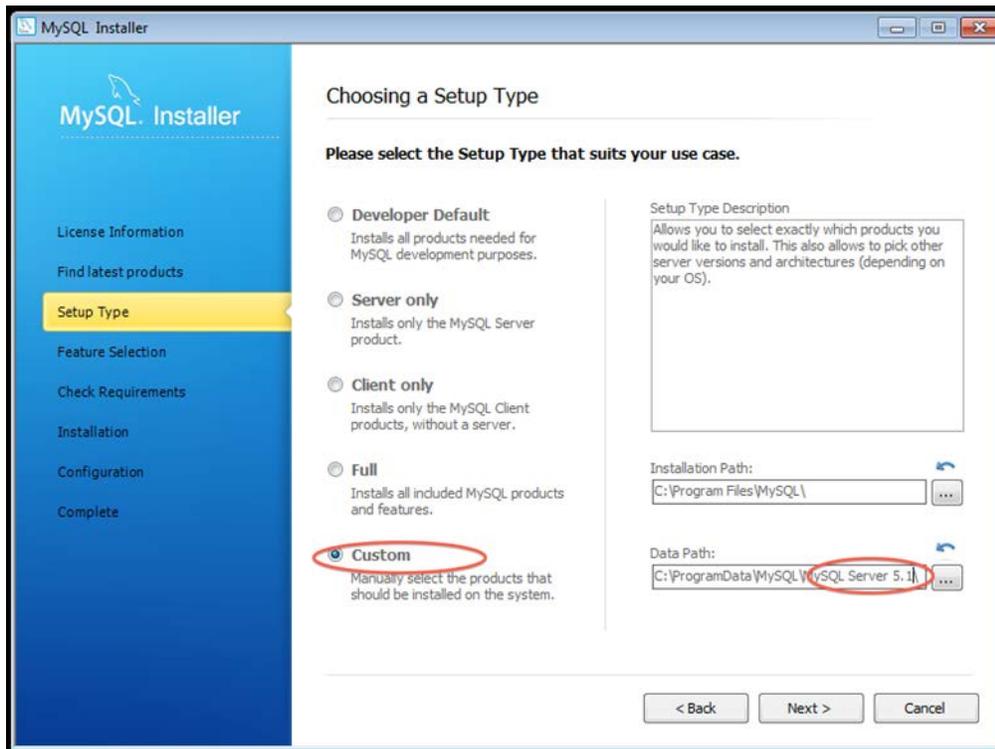


Figure 91

Click [Next >].

Now on the Feature Selection screen, you will see a pick list and underneath is configuration for the selected item. By default it will come up to the most current version of MySQL server.

Make sure that the checkbox next to MySQL 5.6.11 is NOT selected. See Figure 93

You may want to also uncheck the Documentation for 5.6.11.

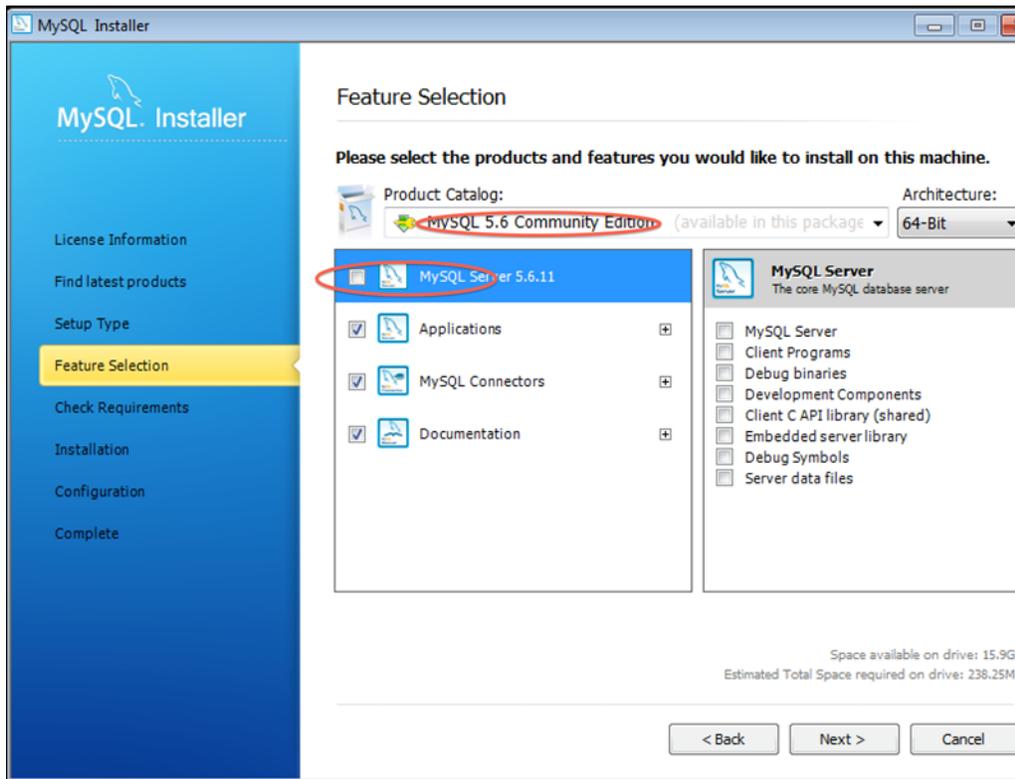
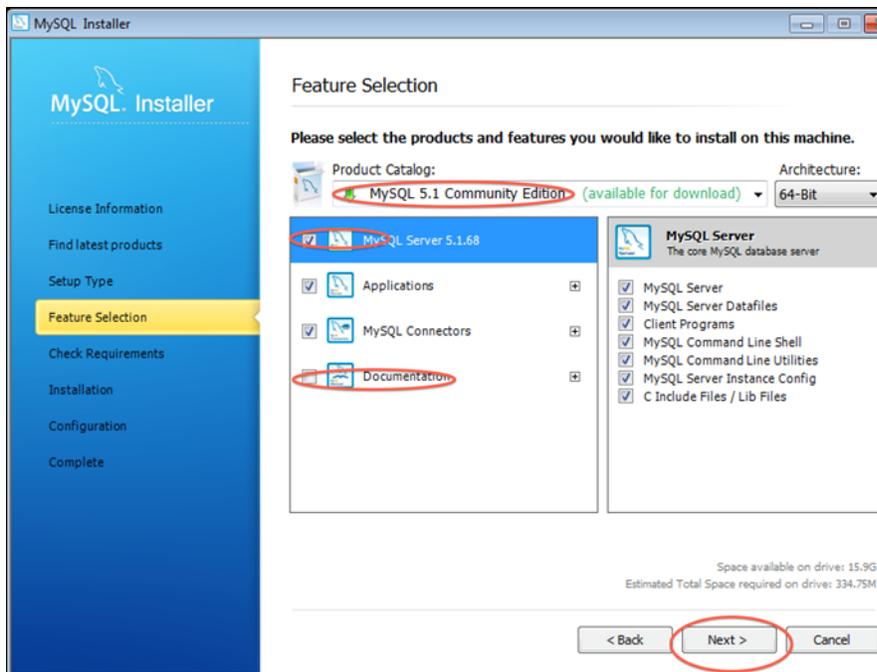


Figure 92

Then change the pick list value to MySQL 5.1 Community Edition.

In the window below (Figure 94), make sure that you select the checkbox next to MySQL 5.1 Community Edition.

**Figure 93**

Make sure that Applications and MySQL Connections is also selected.

Click [Next >].

The system will now display the required applications/tools. And which are installed and not installed. See Figure 95.

Click [Execute] and install any missing tools.

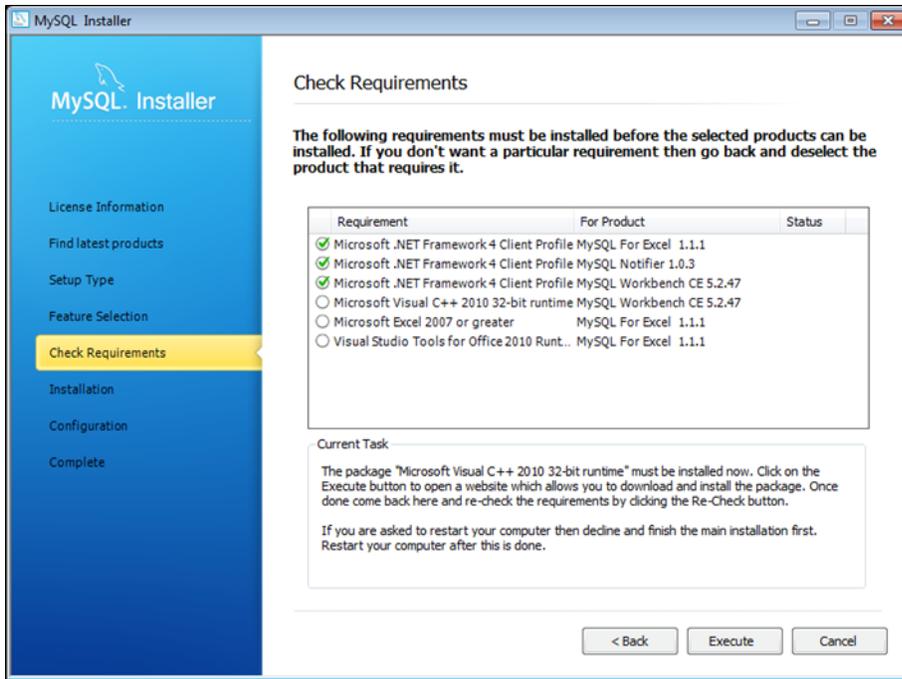


Figure 94

The system will show you exactly what will be installed. See Figure 96.

Make sure that MySQL 5.1.68 is either "To be downloaded" or "To be installed" and that MySQL 5.6.11 is NOT on the list. Click [Execute]

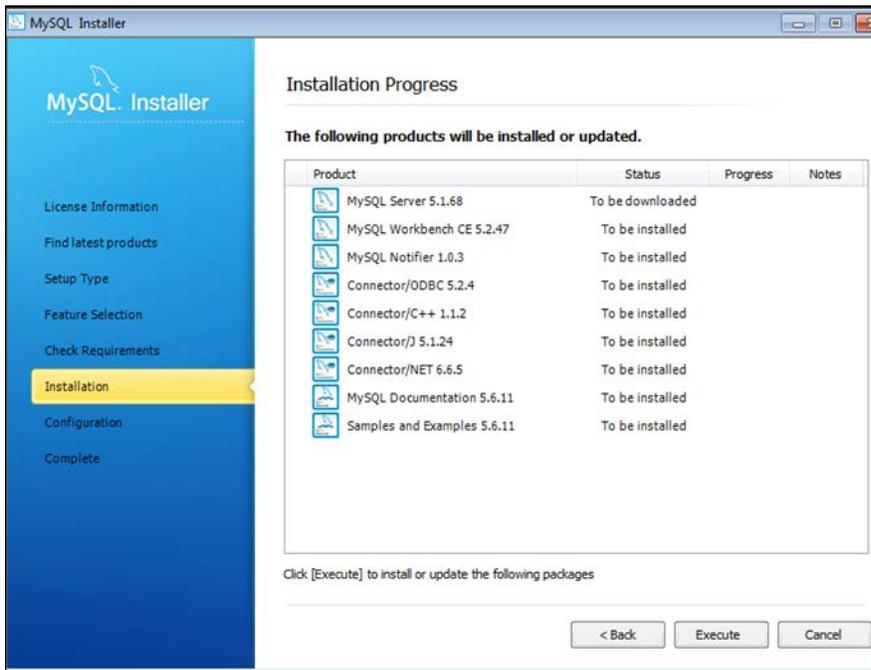


Figure 95

The system might have to download the Server. See Figure 97.

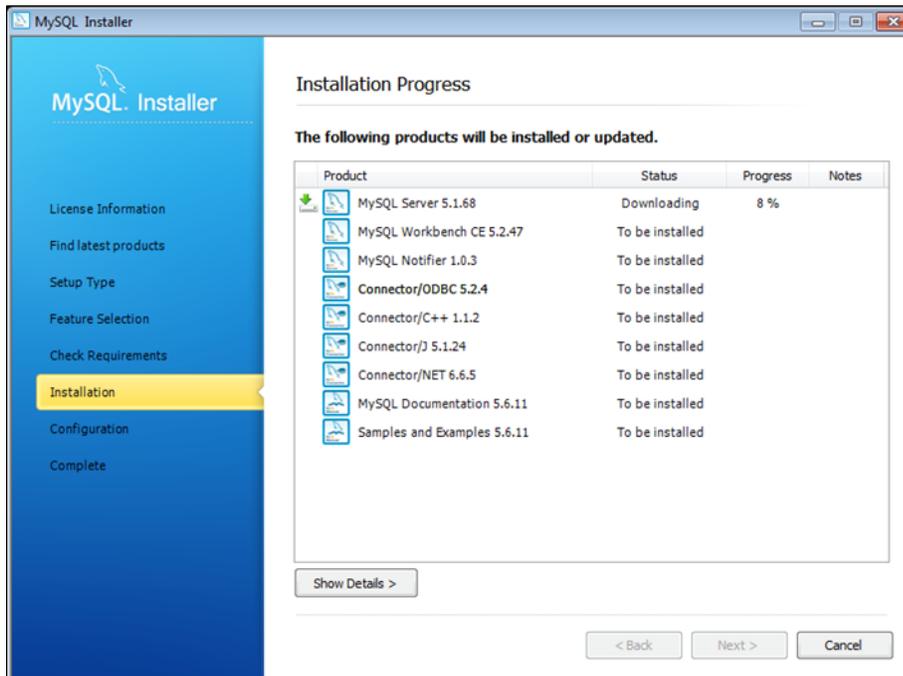


Figure 96

Proceed to 6.2.2.2.3 below.

6.2.2.2.2 Previous MySQL Products installed

If you happen to have any MySQL products installed already you will see an option to update, but you want to pick the [Add/Modify Products and Features]. See Figure 98.



Figure 97

Caution Don't use the [Install updates] option.

The installer window will appear.

There is a product Catalog pick list. You select the options you want installed for the current catalog item selected.

By default it will come up to the most current version of MySQL server.

Make sure that the checkbox next to MySQL 5.6.11 is NOT selected. See Figure 99.

You may want to also uncheck the Documentation for 5.6.11.

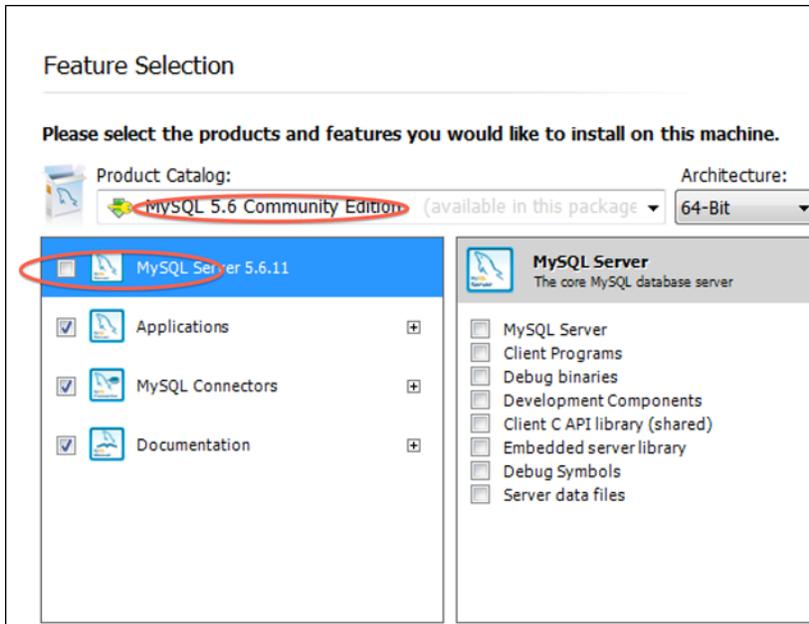


Figure 98

Then change the pick list value to MySQL 5.1 Community Edition. See Figure 100.

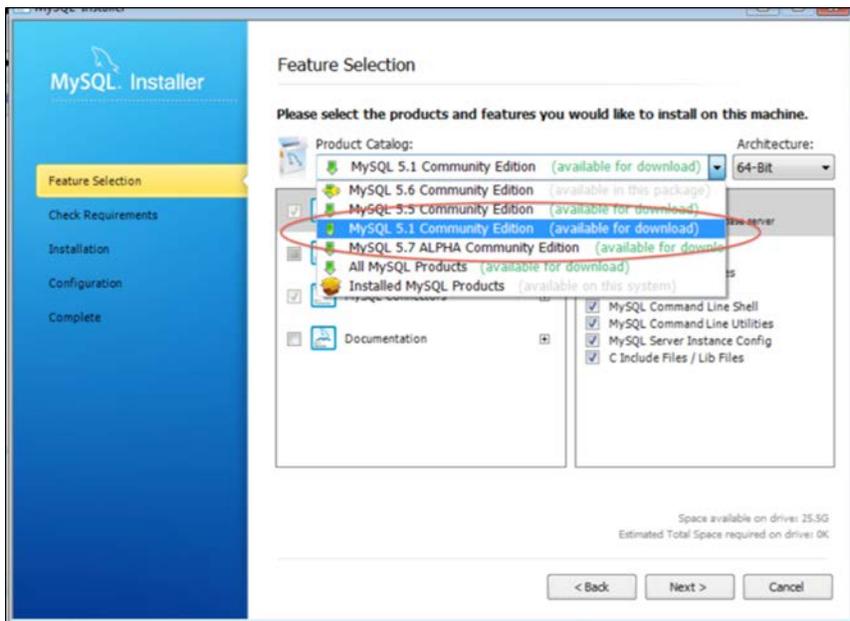


Figure 99

In the window below (Figure 101), make sure that you select the checkbox next to MySQL 5.1 Community Edition.

Make sure you select the correct version of MySQL. We want 5.1!!

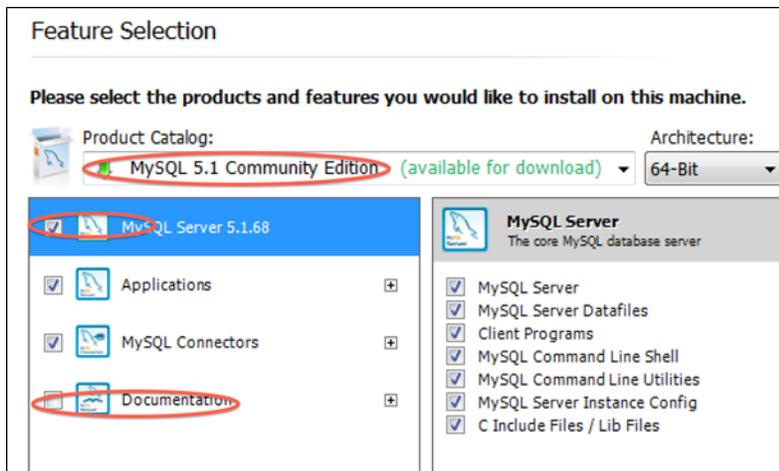


Figure 100

Caution Did you select MySQL 5.1?

Click [Next >]

Now you will be taken to the requirements screen. Click [Next]. System will begin to install all the required material if not already installed.

6.2.2.2.3 Configuration

On page one, make sure to select *Developer Machine*, and to select the *Show Advanced Options* check box. See Figure 102

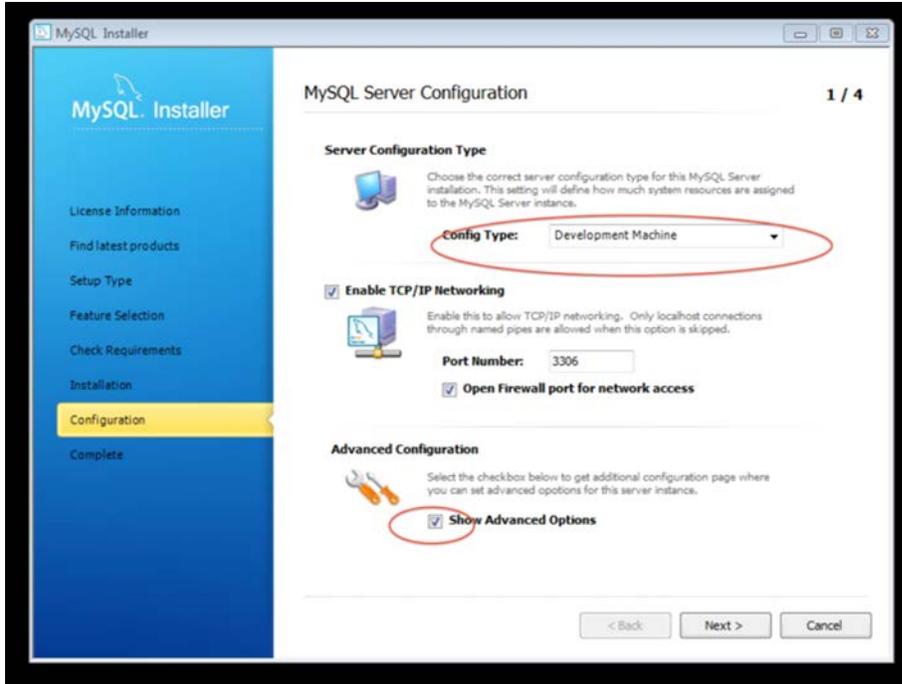


Figure 101

Page 2:

Enter the password for the root user. See Figure 103.

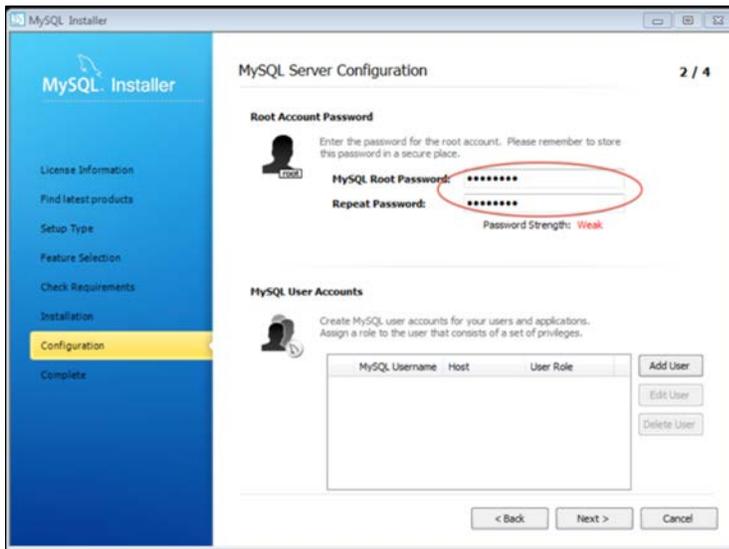


Figure 102

Page 3:

Leave the *Start the MySQL Server at System Startup* checkbox blank. See Figure 104.

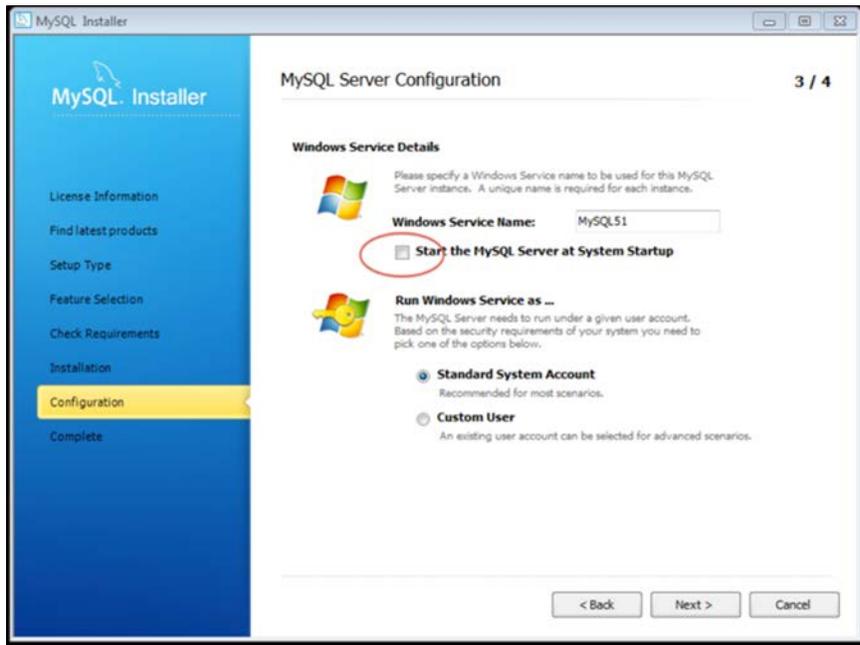


Figure 103

Page 4:

Choose which logging options you want. See Figure 105.

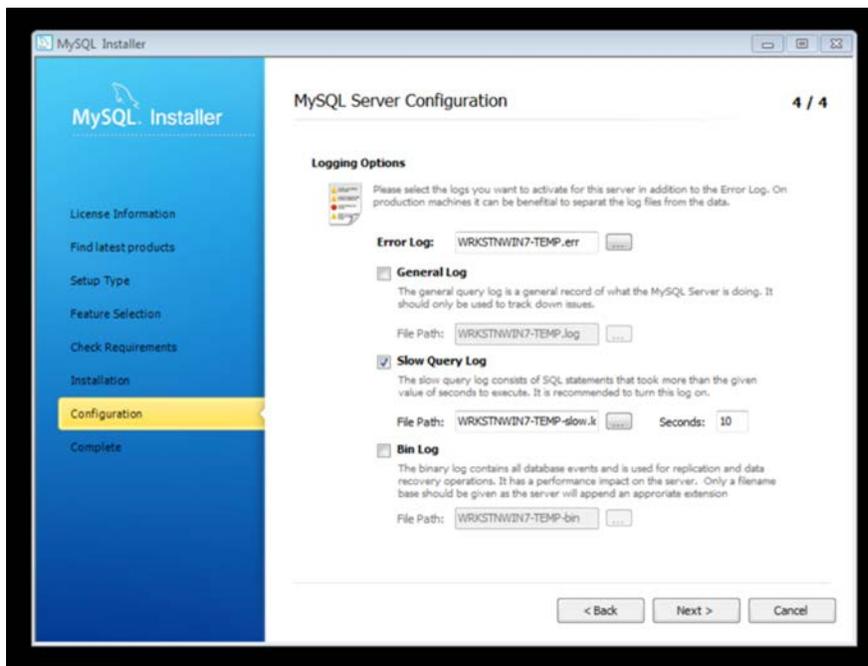


Figure 104

And now the server will finish the configuration. See Figure 106

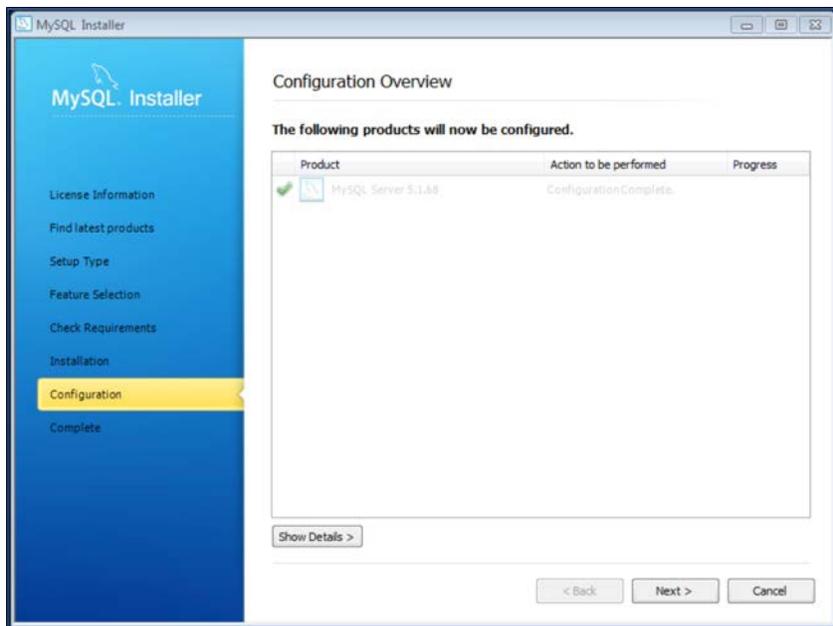


Figure 105

Click [Next >] and wait for it to finish.

Configuration The default installation will be: C:\Program Files\MySQL\MySQL Server 5.1\

6.2.3 Start MySQL

6.2.3.1 MAC OS

Open system preferences and double click on the MySQL preference pane under “Other”. See Figure 107



Figure 106

Start MySQL by clicking on the [Start MySQL Server] button. See Figure 108. This will prompt you for your system password.



Figure 107

If MySQL started successfully, the panel should now look like Figure 109 (green “running”).



Figure 108

6.2.3.2 Windows

Click start and search for *Services*. See Figure 110.

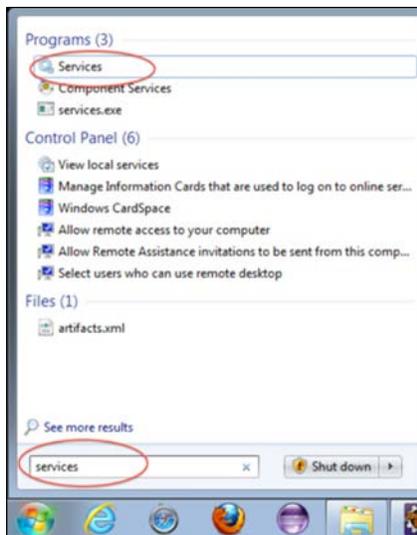


Figure 109

Click the [Services] Program.

In the resulting application window that pops up (Figure 111), search and select MySQL51.

Then click the [Start] link on the left.

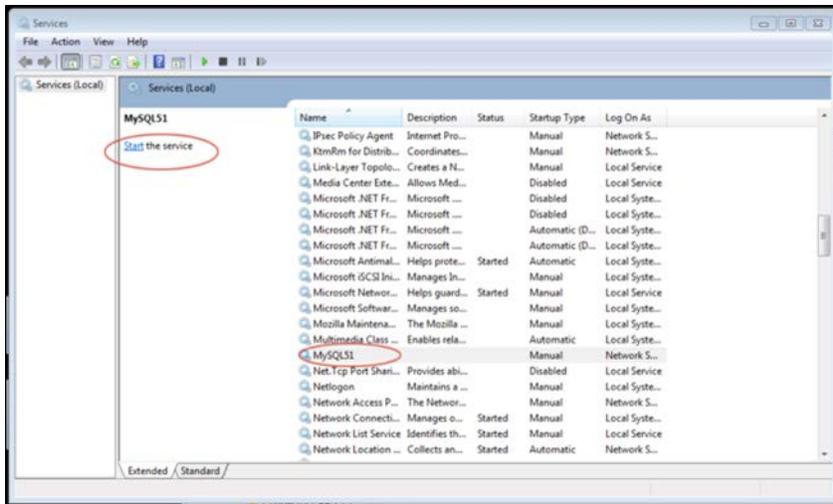


Figure 110

6.2.4 Secure the MySQL Installation (MAC OS only)

Procedure:

Secure the MySQL installation by setting the root password, deleting anonymous users, and dropping the test database. This can be done through the included utility, `mysql_secure_installation` located in the `mysql/bin` directory.

Caution In order to run this you must be in the `/usr/local/mysql` directory or it will fail.

```
cd /usr/local/mysql
sudo bin/mysql_secure_installation
```

Follow the prompts on the screen to set the root users password, delete anonymous users, delete the test database, and flush the privileges. Enter yes to all of these.

Caution The first time through, the root user's password is blank.

6.2.5 Configuring source files for various jars

For example if you want to be able to step through jasper reports execution and debug issues.

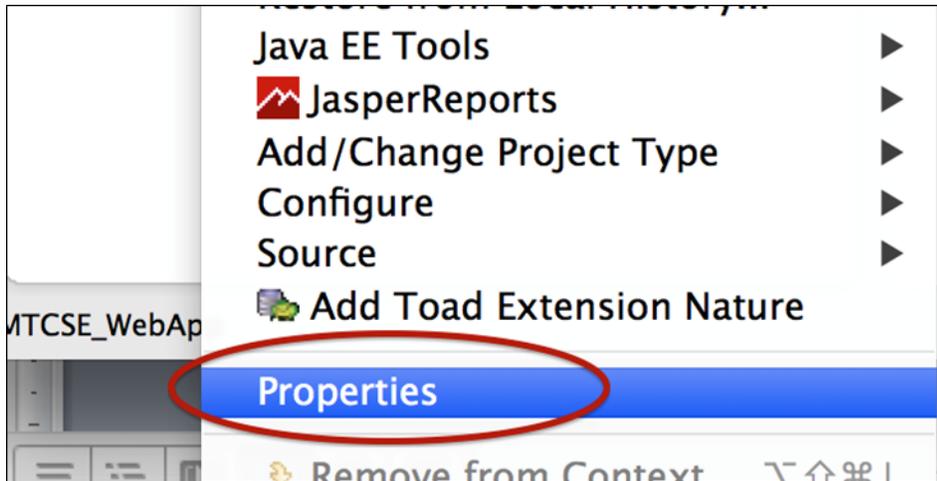
Get the source file jar from:

<http://greencode.com/snapshot/repo1.maven.org/maven2/net.sf.jasperreports/jasperreports/5.0.1>

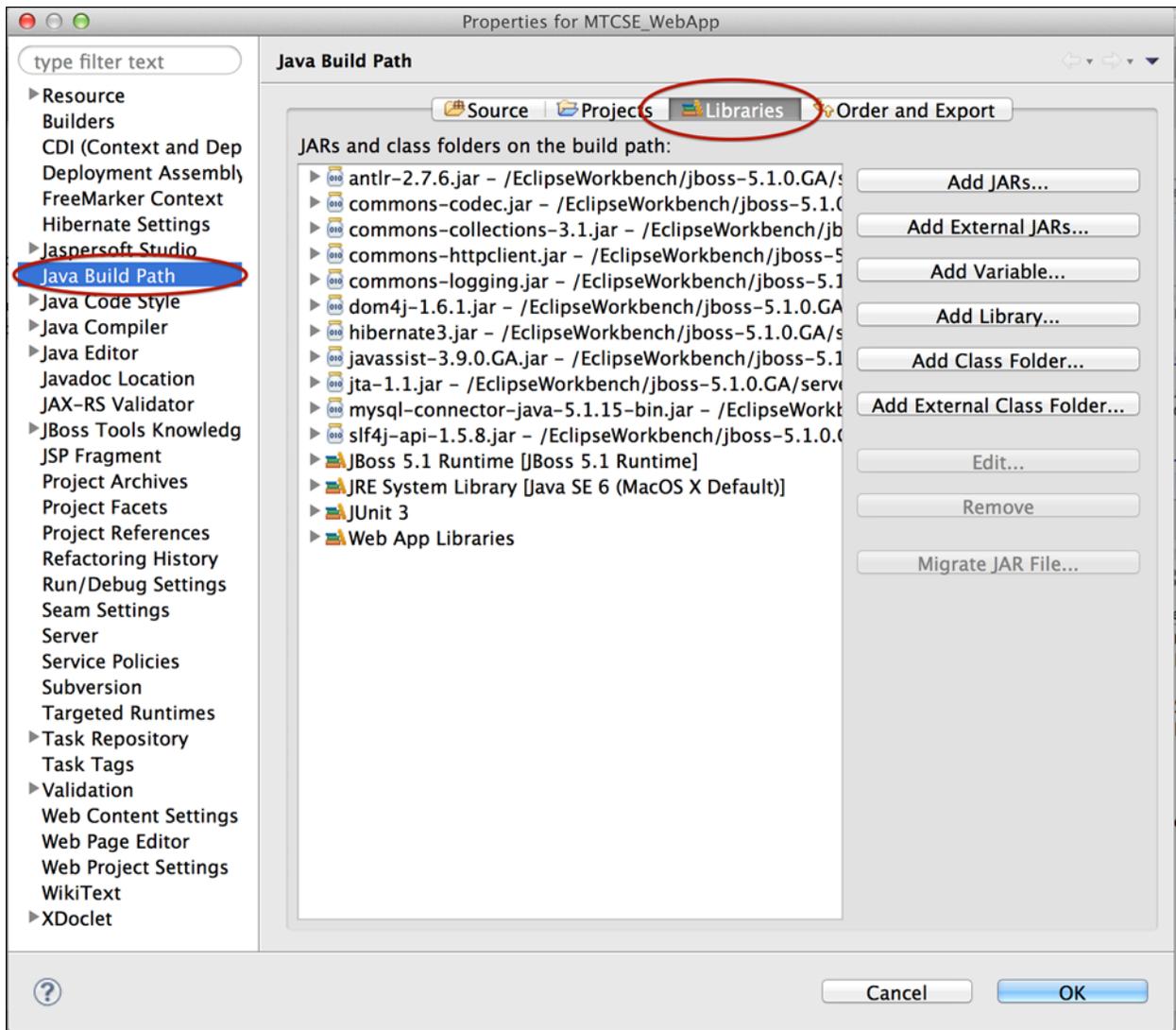
Put the source file on your system. It can be anywhere, but I recommend
/EclipseWorkbench/sources/.

Next you have to go to the project eclipse that includes the jar.

In this case the MTCSE_Webapp project. Click on the project, and then right click to open the properties:

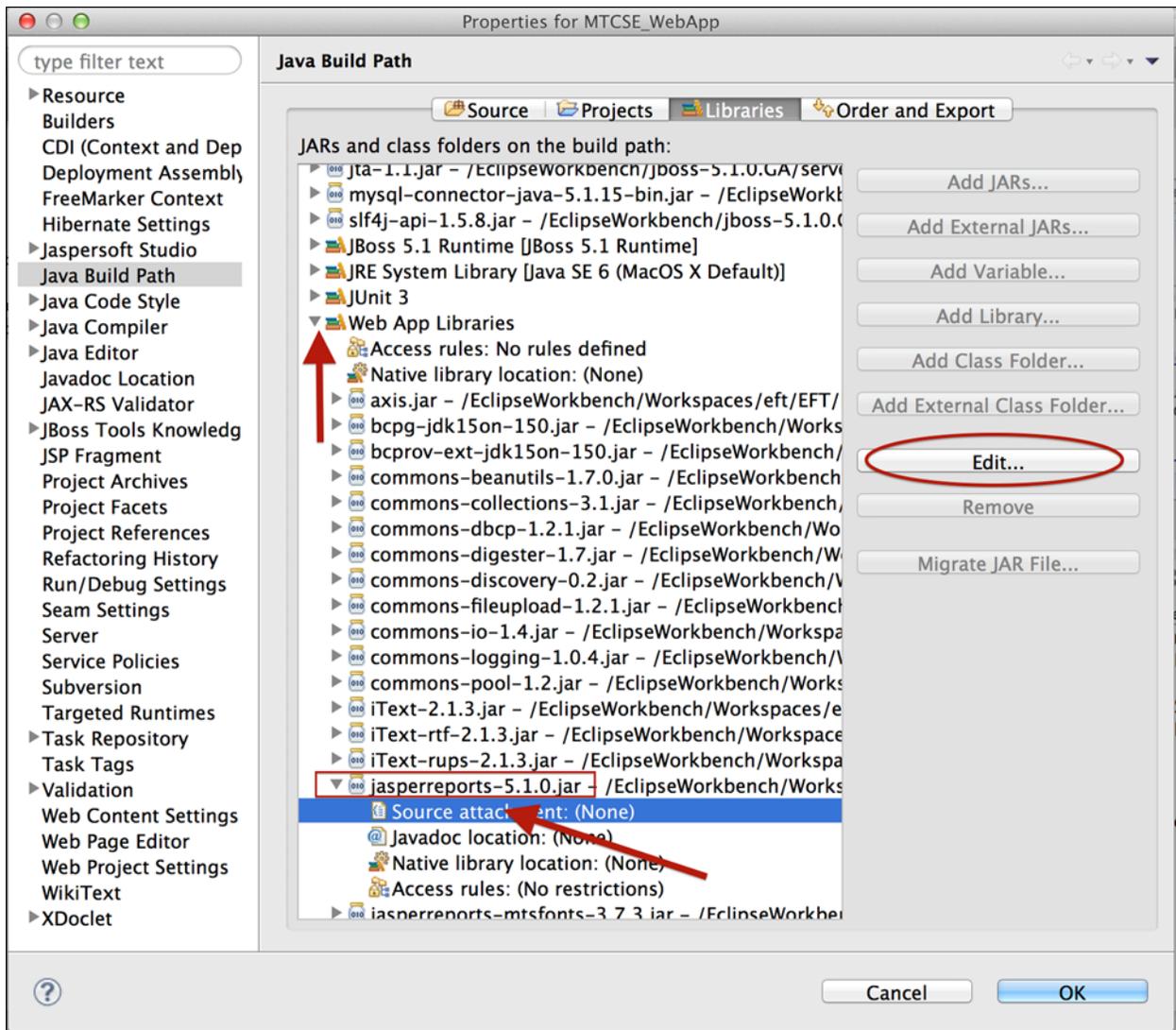


In the properties Window that pops up, select Java Build Path and the Libraries tab.

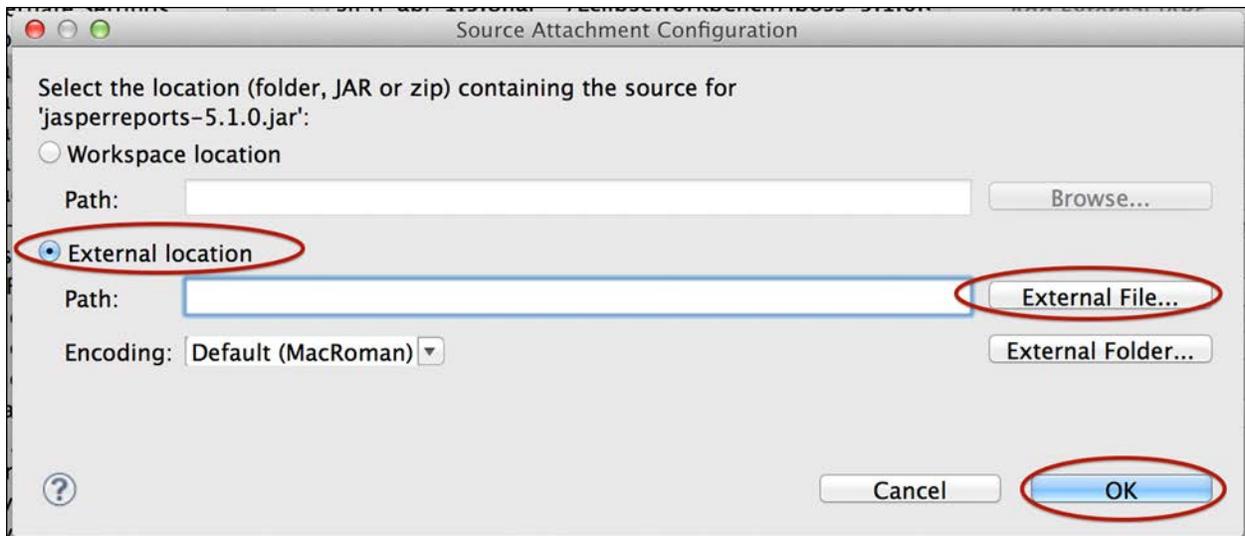


Then find your jar file.

It might be listed directly, like the commons-codec.jar, or it might be included in another folder. For example in this situation it's in the "Web App Libraries" folder.



Expand the jar file and highlight the “Source attachment” line. Then click “Edit...”



In the Dialog box, select “External location”, then find the source jar file using “External File...”

Then after you have selected it hit [OK].

Then hit [OK] on the previous window.

You should now be configured to debug into the source file of the jar you selected.

7 Prepare, Deploy, and Launch the Application

In all the below, we will be using a lot of command line entries.

Since the MySQL root directory varies from Windows to Mac, We use the following convention:

`<mysql_path>` which should be replaced with the path based on your deployment

MAC OS: `/usr/local/mysql`

Windows: `C:\Program Files\MySQL\MySQL Server 5.1`

For example:

`<mysql_path>/bin/mysql`

becomes

in MAC OS:

`/usr/local/mysql/bin/mysql`

in Windows:

`C:\Program Files\MySQL\MySQL Server 5.1\bin\mysql`

Caution The user is encouraged to adjust their path settings so that MySQL will be available without having to enter the complete path.

7.1 Create the DB Instance

If you installed a new db then you must create the db instance.

Procedure:

From the command line type

`<mysql_path>/bin/mysql -uroot -p`

Enter your password when prompted.

At the MySQL prompt create the database.

`mysql> create database mts;`

Caution Remember we are creating our database to be mts so for this document you should use:
`mysql> create database mts`

7.2 Reload Database

If you had a previous version of MySQL loaded, then you may wish to reload the databases. But we encourage you to move on to 7.3 and get the most recent version of the db to load.

If re-using the previous schema, reload the databases backed up in step one.

Procedure:

Exit MySQL and navigate to the directory where you backed up your files from the command line. Once there, you can use the following commands to load your database.

```
<mysql_path>/bin/mysql -uroot -p [database name] < [your file].sql
```

7.3 Blank Schema or Most Current DB for Deployment

If you are using a new blank schema or just want the most current db for deployment, you can get a copy of the current db script from the DSTS administrator. As of this publication contact Tom Mahony tom.mahony@acf.hhs.gov

Unzip the archive you receive.

Caution

For Windows you may have to download a tool to un-compress the GNU Zip file. I recommend 7-zip, which is free.

Then in a terminal/command window run:

```
<mysql_path>/bin/mysql -uroot -p mts < [your file]
```

For example:

```
/usr/local/mysql/bin/mysql -uroot -p mts < 60_cases_plus_fin.sql
```

Next you must start the MySQL program so that you can run a few scripts.

In a terminal/command window run:

```
<mysql_path>/bin/mysql -uroot -p
```

At the “mysql>” prompt execute the following commands:

```
mysql> update mts.cmmn_user set cus_reset_passwd_dte = adddate(now(), interval 1 year);
```

You should get a response saying that so many rows were affected:

```
Query OK, 59 rows affected, 59 warnings (0.06 sec)
```

```
Rows matched: 59 Changed: 59 Warnings: 59
```

Next type this command:

```
mysql> commit;
```

Then execute this one:

```
mysql> update mts.cmmn_user_role set cur_end_dte = adddate(now(), interval 1 year);
```

Commit again:

```
mysql> commit;
```

And finally execute this command:

```
mysql> GRANT ALL on *.* to 'diff'@'192.168.102.%' identified by '9876543d2';
```

Then exit;

```
mysql> exit
```

7.4 Install GUI Tool to View MySQL database. (Mac OS only)

Configuration Windows deployment automatically loads the MySQL workbench.

Procedure:

Install the MySQL Workbench using the mysql-workbench-gpl-5.2.47-osx-i686.dmg.

7.5 Verify Structure/Data Was Loaded

Procedure:

Use the MySQL Workbench, and open connection to the MySQL database and verify that the data was loaded.

7.6 Build Application

Procedure:

Open Eclipse.

Click [Project] -> [Clean ..]

See Figure 112

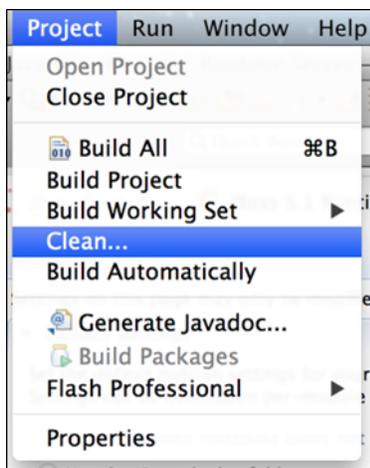


Figure 111

In the popup that follows (Figure 113), click the *Clean All Project* radio button, and then click [OK].

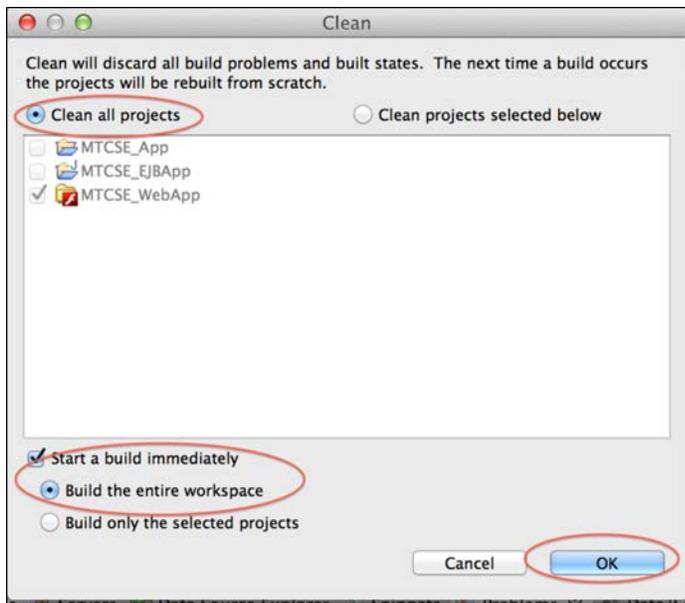


Figure 112

This can take 15+ minutes, depending on the speed of the machine. A Dialog box will show the progress. See Figure 114

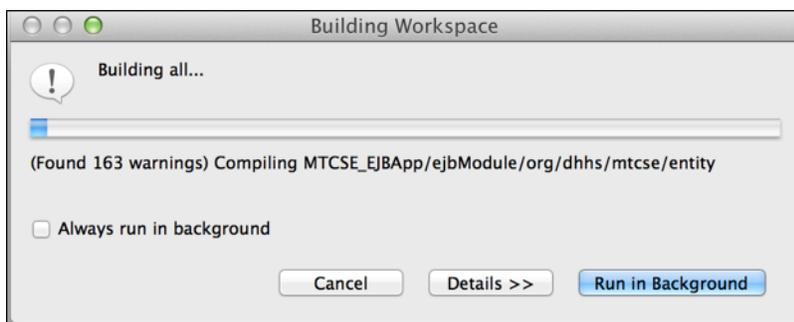


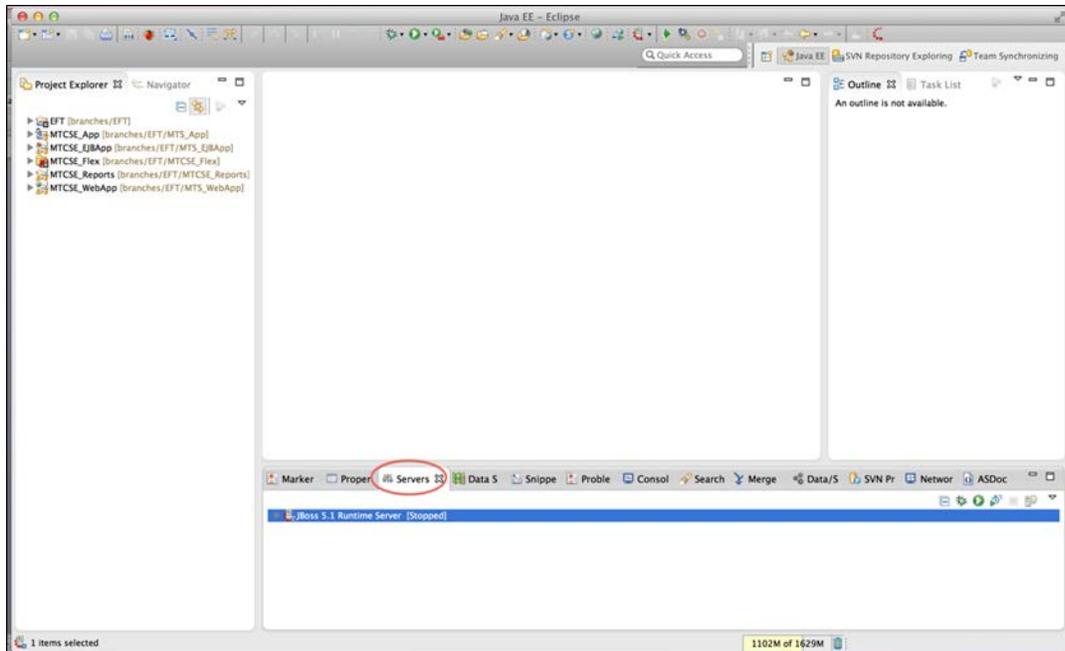
Figure 113

Dialog box will close when the build is complete.

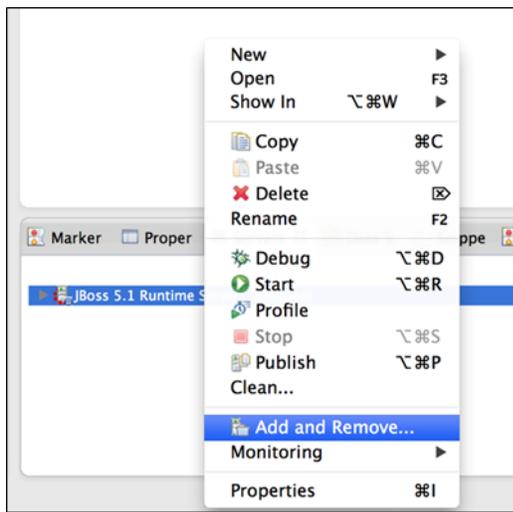
7.7 Deploy the Application

Procedure:

Right click on the *JBoss Server*, under the Server tab.



Select Add and Remove,



On the dialog that pops up. See Figure 115

Select *MTCSE_App* from the available resource and click the [Add>>] button.

Click [Finish].

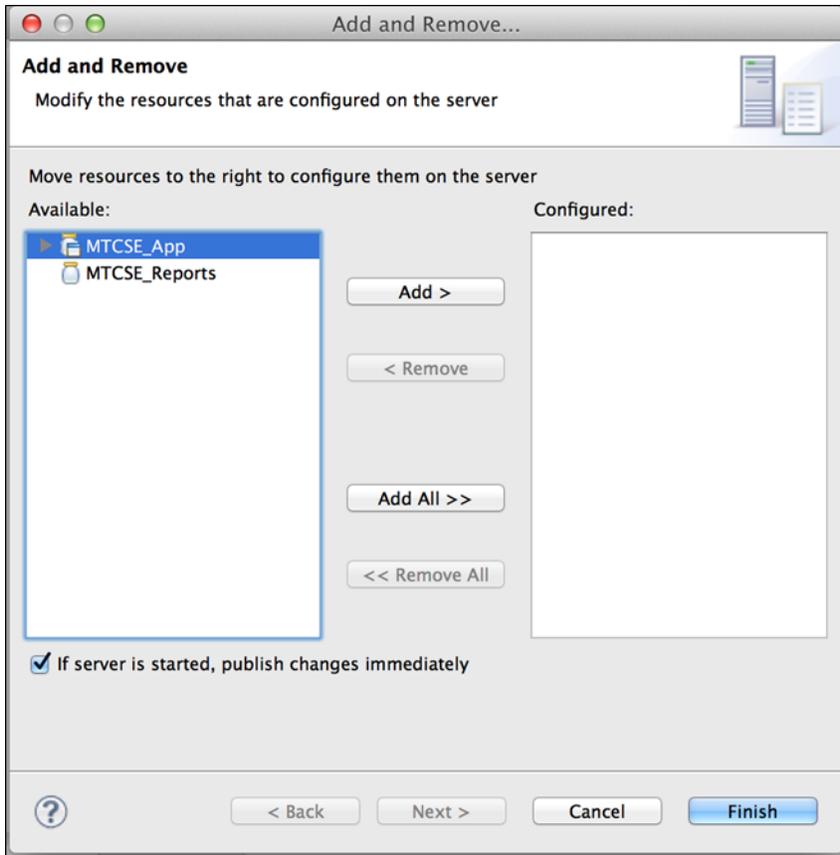


Figure 114

Now right-click on JBoss 5.1.0 server to bring up the menu items. See Figure 116. Click [Clean...]

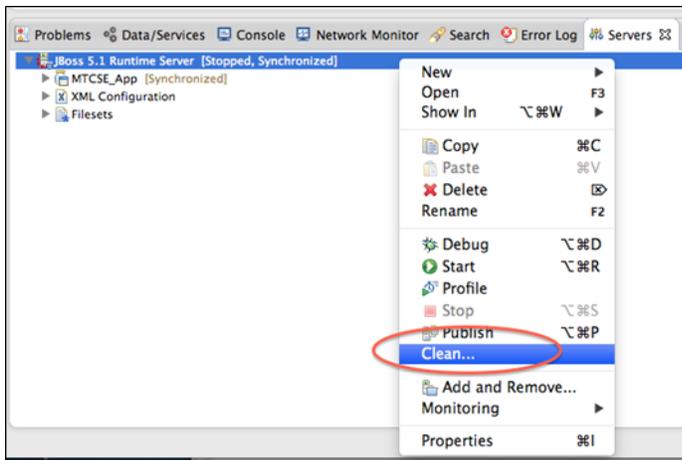


Figure 115

7.8 Start the Application

Procedure:

Click on the Go button (See Figure 117), or use the Menu.

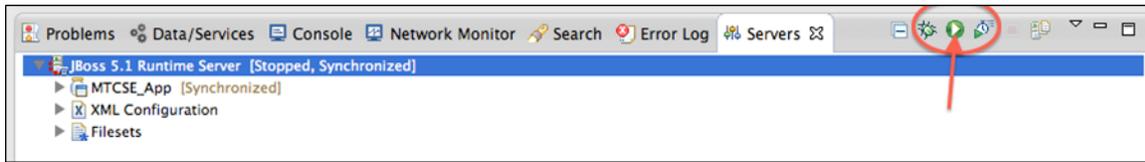


Figure 116

Review the console for errors.

If all goes well the final line should look much like Figure 118:

```

14:12:46,198 INFO [JobSchedulingDataProcessor] Adding job: DISBURSEMENT_GROUP.DisbursementJob
14:12:46,198 INFO [JobSchedulingDataProcessor] Adding job: DISBURSEMENT_WEEKEND_GROUP.DisbursementWeekendJob
14:12:46,199 INFO [JobSchedulingDataProcessor] Adding job: CHARGING_GROUP.DailyFinancialJobs
14:12:46,199 INFO [JobSchedulingDataProcessor] Adding job: MONTHLY_GROUP.AccountsHistoryJob
14:12:46,200 INFO [JobSchedulingDataProcessor] Adding job: FYREPORTING_GROUP.AnnualFedFYReportJob
14:12:46,201 INFO [JobSchedulingDataProcessor] Adding job: QTR1_REPORTING_GROUP.Qtr1FedFYReportJob
14:12:46,201 INFO [JobSchedulingDataProcessor] Adding job: QTR2_REPORTING_GROUP.Qtr2FedFYReportJob
14:12:46,202 INFO [JobSchedulingDataProcessor] Adding job: QTR3_REPORTING_GROUP.Qtr3FedFYReportJob
14:12:46,202 INFO [JobSchedulingDataProcessor] Adding job: QTR4_REPORTING_GROUP.Qtr4FedFYReportJob
14:12:46,203 INFO [JobSchedulingDataProcessor] Adding job: CASEMGMT_GROUP.DailyMonitorJobs
14:12:46,204 INFO [JobSchedulingDataProcessor] 11 scheduled jobs.
14:12:46,204 INFO [QuartzScheduler] Scheduler MTCSEScheduler_$_NON_CLUSTERED started.
14:12:46,431 INFO [Http11Protocol] Starting Coyote HTTP/1.1 on http-localhost%2F127.0.0.1-8080
14:12:46,450 INFO [AjpProtocol] Starting Coyote AJP/1.3 on ajp-localhost%2F127.0.0.1-8009

```

Figure 117

The key thing to note is that “Starting Coyote HTTP ... on ... localhost..” and “Starting Coyote AJP ... on ... localhost...” are displayed in the log. This means that the server is up and running.

7.9 Smoke Test the Application

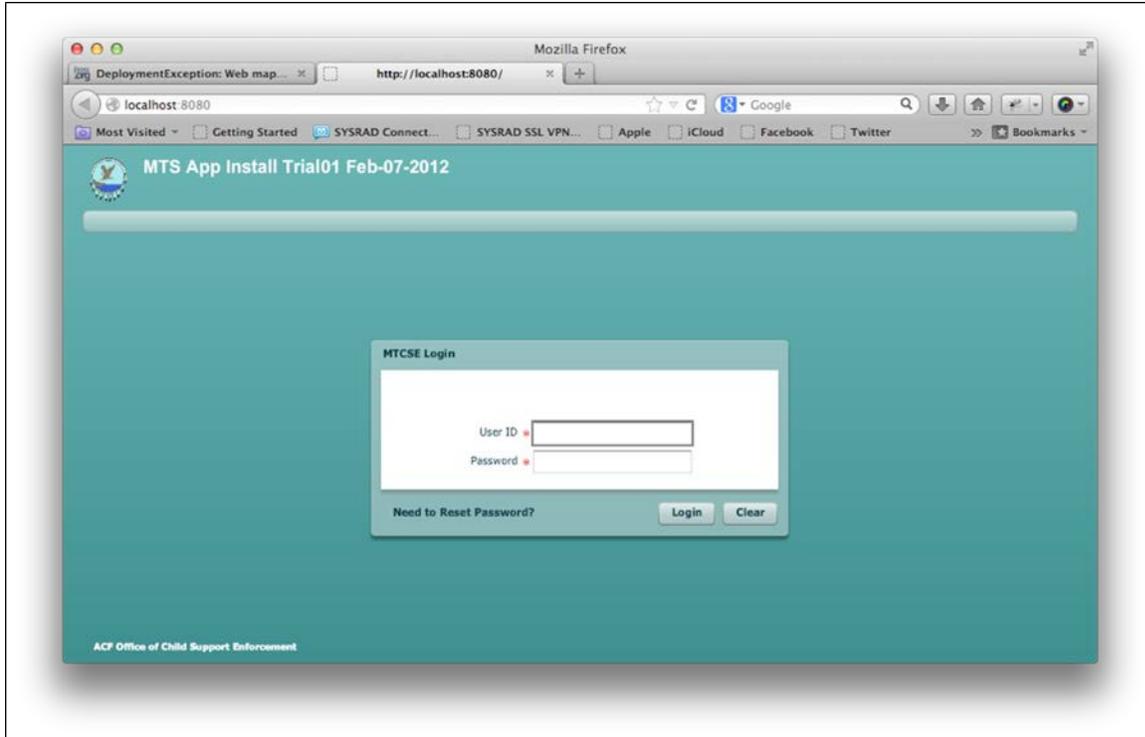
Next check that the Application works:

Procedure:

In a browser open the following URL:

<http://localhost:8080/>

You should see the application as in Figure 119.

**Figure 118**

If you used the 60 cases db, then enter a sample User ID and Password:

User ID: kkearl

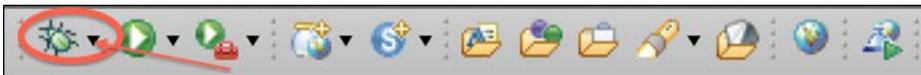
Password: kayl

7.10 Setup Eclipse for Client side Flex Debugging

It is assumed that your server is already running from above (Either in normal or debug mode). These instructions are specifically to allow you to debug the client side Flex code MXML or ActionScript files.

To use your IDE as a debugging tool for the flex side, you will need to do the following:

From either the [Java EE] or [Flash] Perspectives, you will see a list of icons at the top of the screen. See Figure 120

**Figure 119**

Click on the triangle just to the right of the green “bug”.

Click on [Debug Configurations...]. See Figure 121

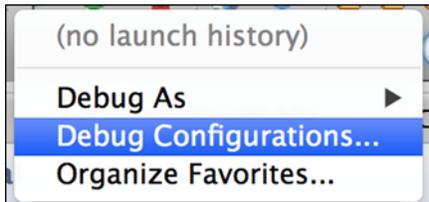


Figure 120

In the Window that pops up (See Figure 122): Click [Web Application], then click the New icon.

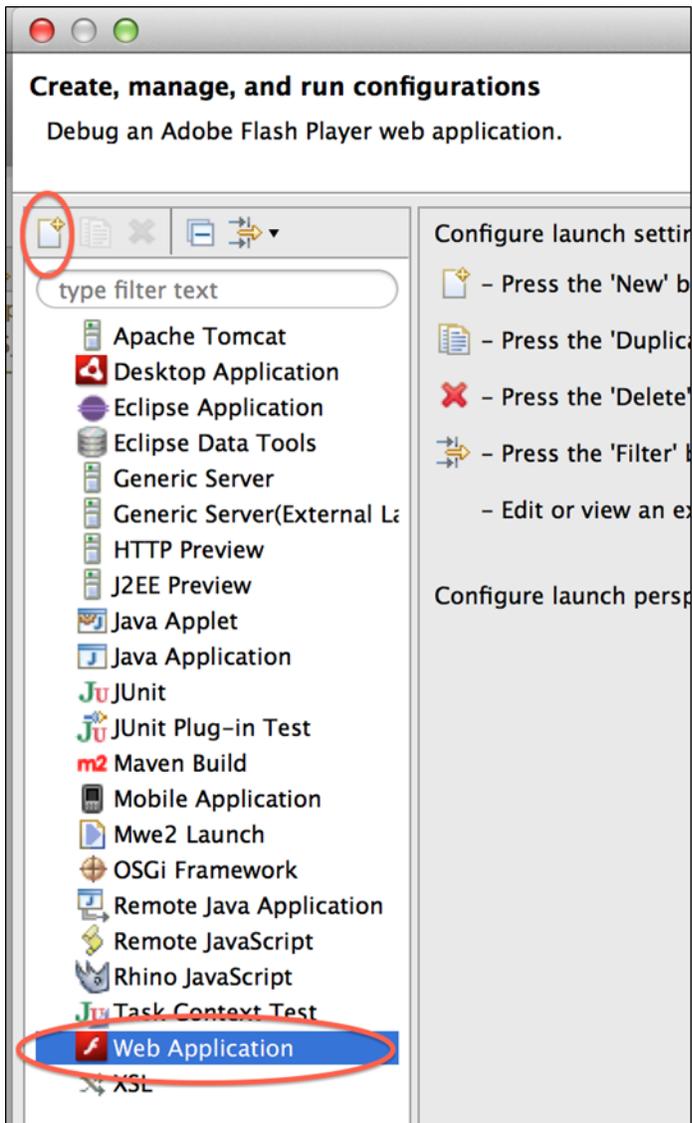


Figure 121

On the right hand side (see Figure 123): Enter a name for this configuration “Flex debug”

[browse] and find the Application: MTCSE_Flex.

In the section URL or path launch, uncheck the default checkbox, and enter in the text box below: <http://localhost:8080/>

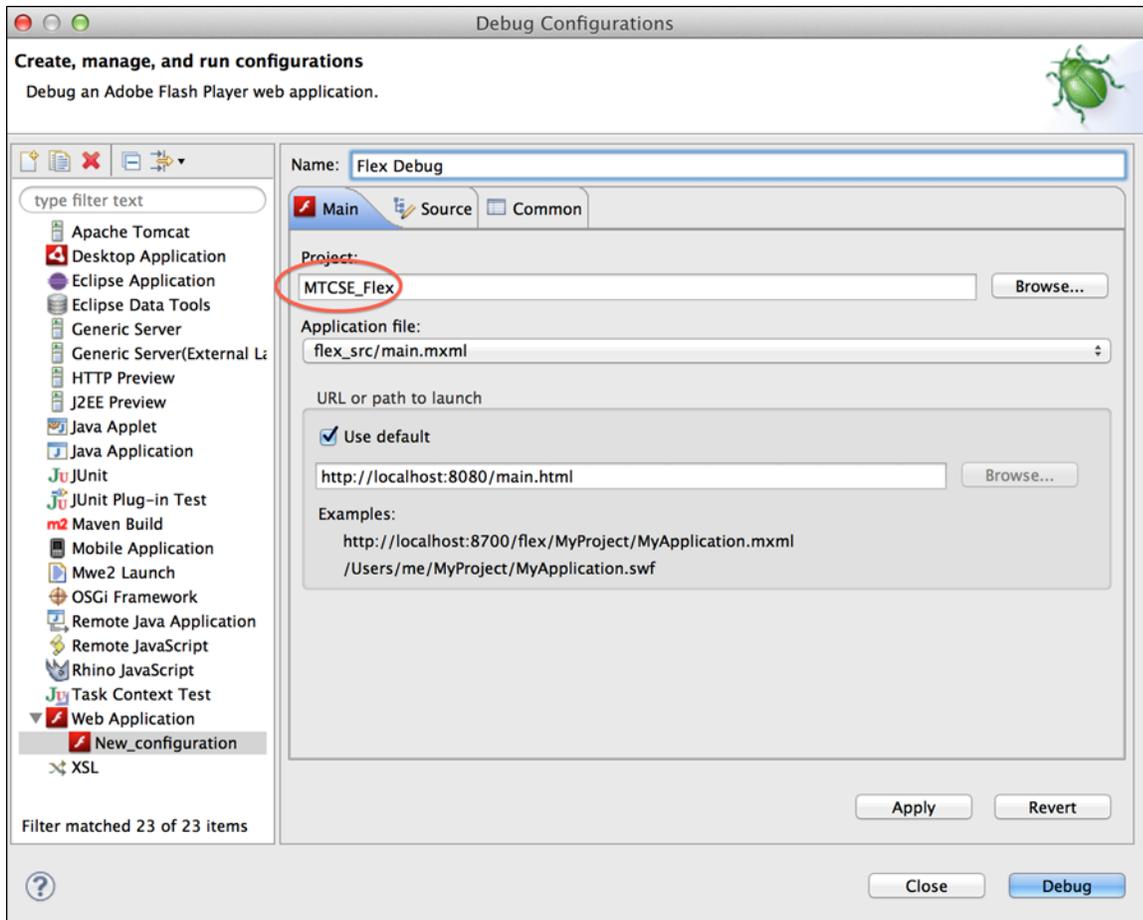


Figure 122

Then click the “Common” tab (See Figure 124), and on that screen in the display in favorites menu, check [Debug].

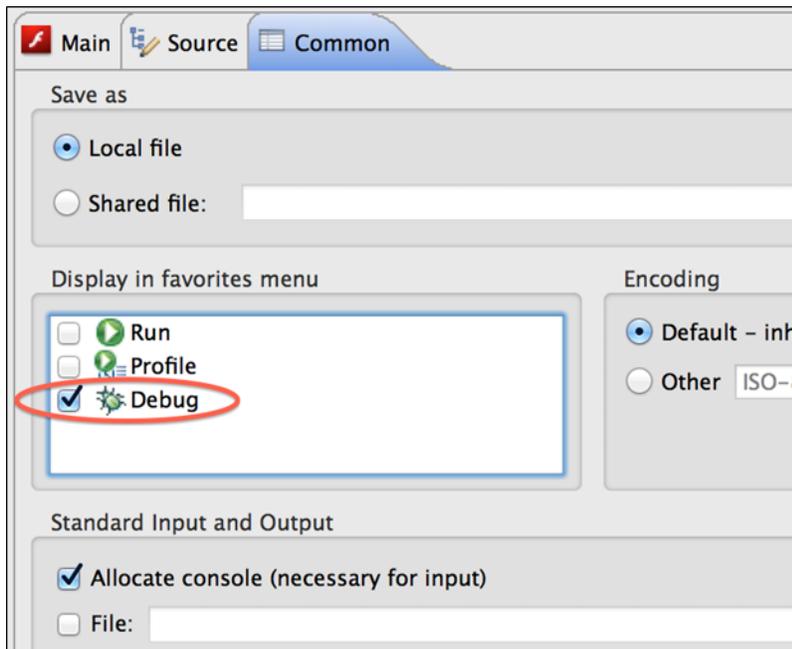


Figure 123

[Apply] and [Close]

Make sure that the Server is running.

Caution You can start the server in either debug, or normal mode. If you want to debug both Server side and Client side simultaneously then start the server in debug mode before you launch this debug.

Now go back and click that triangle next to the green bug again. See Figure 125

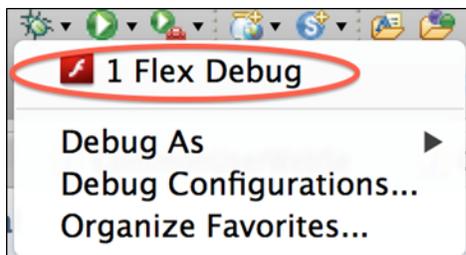


Figure 124

Our configuration is present.

Click [Flex Debug].

The application will start up, and a browser will automatically be launched.

If your system default browser does not support Flash debugging, then you will have to change your default to either Firefox or IE, or something that is compatible.

When debugging this way, you may wish to modify the timeout for the browser, when waiting for the procedure to finish.

7.10.1 Safari Browser Setup

In MacOS, Open Terminal

Type:

```
defaults write com.apple.Safari WebKitDisablePluginProcessMessageTimeout YES
```

Restart Safari.

7.10.2 Firefox Browser Setup

In the browser's address bar type:

```
about:config
```

Click the "I'll be careful" button in the warning dialog and then scroll down to this line:

```
dom.ipc.plugins.timeoutSecs
```

Double click on that line and set the value to -1

7.11 Adding jdbcdslog Support

It is often useful for a developer to see the SQL queries that are being made to the database, to either validate their correctness or do other profiling tasks.

jdbcdslog is a seamless integration that allows the developer to see the actual queries made, with parameters, in the console. For example:

```
2014-01-28 13:02:00,026 INFO [org.jdbcdslog.StatementLogger] (MTCSEScheduler_Worker-8) java.sql.PreparedStatement.executeQuery select this_.PTR_ID as PTR1_43_0_, this_.PTR_CREATEDBY_NM as PTR2_43_0_, this_.PTR_CREATEDTIME_DTE as PTR3_43_0_, this_.PTR_DOC_DATA_BLB as PTR4_43_0_, this_.PTR_DOC_LOC_TXT as PTR5_43_0_, this_.PTR_DOC_NM_TXT as PTR6_43_0_, this_.PTR_JOB_STAT_CD as PTR7_43_0_, this_.PTR_KEY_TXT as PTR8_43_0_, this_.PTR_KEY_VALUE_TXT as PTR9_43_0_, this_.PTR_MIMETYPE_TXT as PTR10_43_0_, this_.PTR_PRINT_PARAMS_TXT as PTR11_43_0_, this_.PTR_PRTR_NM_TXT as PTR12_43_0_, this_.PTR_UPDATEDBY_NM as PTR13_43_0_, this_.PTR_UPDATEDTIME_DTE as PTR14_43_0_ from print_request this_ where (this_.PTR_JOB_STAT_CD=?) parameters: ['Pending'] 1 ms. at org.jboss.resource.adapter.jdbc.WrappedPreparedStatement.executeQuery(WrappedPreparedStatement.java:342)
2014-01-28 13:03:00,018 INFO [org.jdbcdslog.StatementLogger] (MTCSEScheduler_Worker-9) java.sql.PreparedStatement.executeQuery select this_.PTR_ID as PTR1_43_0_,
```

```
this_.PTR_CREATEDBY_NM as PTR2_43_0_, this_.PTR_CREATEDTIME_DTE as PTR3_43_0_,
this_.PTR_DOC_DATA_BLB as PTR4_43_0_, this_.PTR_DOC_LOC_TXT as PTR5_43_0_,
this_.PTR_DOC_NM_TXT as PTR6_43_0_, this_.PTR_JOB_STAT_CD as PTR7_43_0_,
this_.PTR_KEY_TXT as PTR8_43_0_, this_.PTR_KEY_VALUE_TXT as PTR9_43_0_,
this_.PTR_MIMETYPE_TXT as PTR10_43_0_, this_.PTR_PRINT_PARS_TXT as PTR11_43_0_,
this_.PTR_PRTR_NM_TXT as PTR12_43_0_, this_.PTR_UPDATEDBY_NM as PTR13_43_0_,
this_.PTR_UPDATEDTIME_DTE as PTR14_43_0_ from print_request this_ where
(this_.PTR_JOB_STAT_CD=?) parameters: ['Pending'] 0 ms. at
org.jboss.resource.adapter.jdbc.WrappedPreparedStatement.executeQuery(WrappedPreparedS
tatement.java:342)
```

To add this support is very easy.

Download the jdbcdslog-1.0.5.jar from <http://code.google.com/p/jdbcdslog/>

Copy a jdbcdslog-1.0.5.jar to the JBoss server.

File Copy:

To /EclipseWorkbench/jboss-5.1.0.GA/server/default/lib/ jdbcdslog-1.0.5.jar

Next you will have to modify the MySQL configuration:

Edit the file: /EclipseWorkbench/jboss-5.1.0.GA/server/default/deploy/mysql-ds.xml

On the line that has:

```
<xa-datasource-class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-
class>
```

Change the data source class to:

```
<xa-datasource-class>org.jdbcdslog.ConnectionPoolXADataSourceProxy</xa-datasource-class>
```

Next adjust the URL from:

```
<xa-datasource-property name="URL">jdbc:mysql://localhost:3306/mts </xa-datasource-
property-->
```

To:

```
<xa-datasource-property
name="URL">jdbc:mysql://localhost:3306/mts?targetDS=com.mysql.jdbc.jdbc2.optional.Mysql
XADataSource</xa-datasource-property>
```

Before:

```
<xa-datasource>
  <jndi-name>MySQLDS</jndi-name>
  <min-pool-size>5</min-pool-size>
  <max-pool-size>100</max-pool-size>
  <xa-datasource-class>com.mysql.jdbc.jdbc2.optional.MysqlXADataSource</xa-datasource-
class>
  <xa-datasource-property name="URL">jdbc:mysql://localhost:3306/mts_training</xa-datasource-
property>
  <xa-datasource-property name="User">root</xa-datasource-property>
  <xa-datasource-property name="Password">Bandit10</xa-datasource-property>
</xa-datasource>
```

After:

```
<xa-datasource>
  <jndi-name>MySQLDS</jndi-name>
  <min-pool-size>5</min-pool-size>
  <max-pool-size>100</max-pool-size>
  <xa-datasource-class>org.jdbcdslog.ConnectionPoolXADataSourceProxy</xa-datasource-class>
  <xa-datasource-property
name="URL">jdbc:mysql://localhost:3306/mts_training?targetDS=com.mysql.jdbc.jdbc2.optional.MysqlXA
DataSource</xa-datasource-property>
  <xa-datasource-property name="User">root</xa-datasource-property>
  <xa-datasource-property name="Password">Bandit10</xa-datasource-property>
</xa-datasource>
```

Next time you re-start your JBoss server, you will see SQL logged to the console.

There are some various things you can log they are controlled by the log4j.xml file.

/EclipseWorkbench/Workspaces/dev1/MTCSE_WebApp/src/log4j.xml

In that file you will notice a half dozen entries that start: <category name="org.jdbcdslog.

For each there is a <priority value=" setting.

OFF means don't show the data.

INFO or DEBUG means show the specific info on every SQL call.

Here are what the specific settings do:

jdbcdslog provides 3 loggers(in terms of log4j and jakarta commons) to maintain logging level:

- `org.jdbcdslog.ConnectionLogger` - trace connection details. It produces following log entries:

56 [main] INFO org.jdbcdslog.ConnectionLogger - connect to URL jdbc:hsqldb:. with properties: [user=sa]

- `org.jdbcdslog.StatementLogger` - trace statements sent to DB. It produces following log entries:

62627 [http-8080-1] INFO org.jdbcdslog.StatementLogger - java.sql.PreparedStatement.executeQuery select id, email from user where username = ? parameters: ['admin'] 12ms.

- `org.jdbcdslog.SlowQueryLogger` - trace slow statements sent to DB. If query takes more time then specified by `jdbcdslog.slowQueryThreshold`, it will be logged.
- `org.jdbcdslog.ResultSetLogger` - trace query results. It produces following log entries:

62118 [http-8080-2] INFO org.jdbcdslog.ResultSetLogger - java.sql.ResultSet.next [1234, 'root@a.com']

To turn on other features change the `log4j.xml` setting from `ERROR` or `FATAL` to `INFO`. Rebuild that project, and re-publish and restart the application.

7.12 Testing Reports without the Application

It may be necessary to be able to look at your report without having to fully install it, and deploy the JBoss server.

You can do this by connecting the report directly to the database.

First you will have to add the MySQL connection jar to the java build path of `MTCSE_Reports`.

In the JavaEE Perspective, right click on `MTCSE_Reports` -> Properties.

In the Properties Dialog box, select [Java Build Path]

Click on [Libraries] tab on the right.

Click on [Add External Jars...].

Here select the jar file located at:

`/EclipseWorkbench/jboss-5.1.0.GA/server/default/lib/ mysql-connector-java-5.1.15-bin.jar`

Click [Open].

You should now see Figure 126.

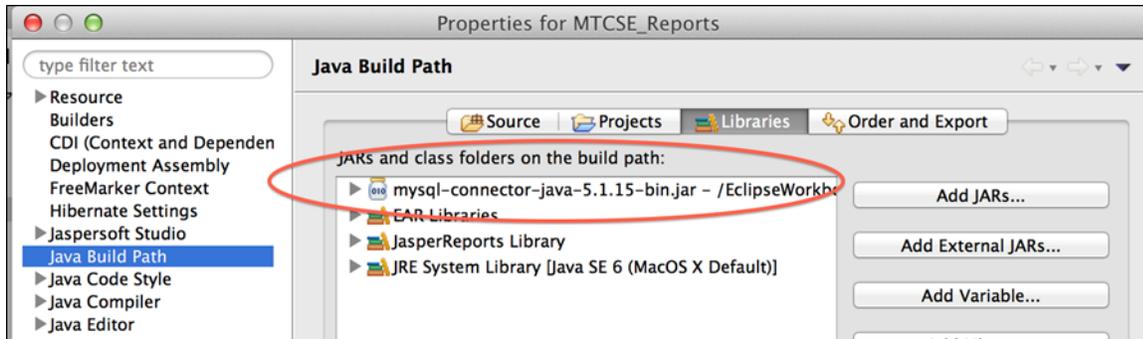


Figure 125

Next we will need to create Resource Adapters to connect to the desired Database to use as the source of data.

We need to open the Report Design perspective:

Click [Window] > [Open Perspective] > [Other...].

Find [Report Design] and click [OK]. See Figure 127.

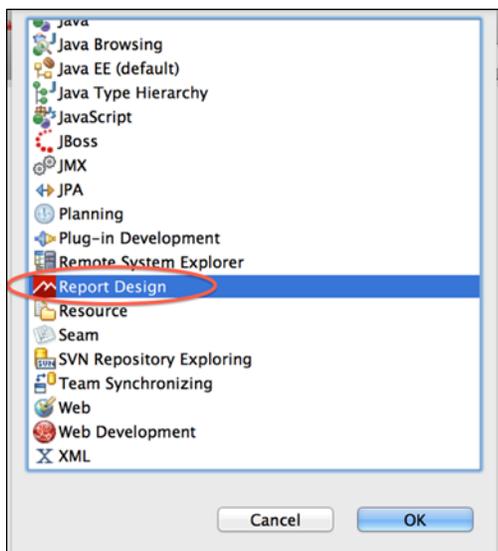


Figure 126

Now in that perspective, choose the [Repository Explorer] tab.
Click Data Adapters and right click.
Choose [Create New Adapter]. See Figure 128.

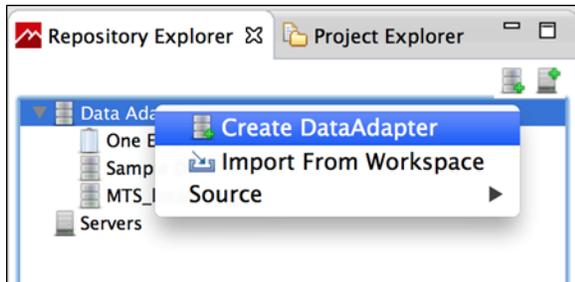


Figure 127

In the Data Adapter Wizard that pops up, select [Database JDBC Connection]
See Figure 129.

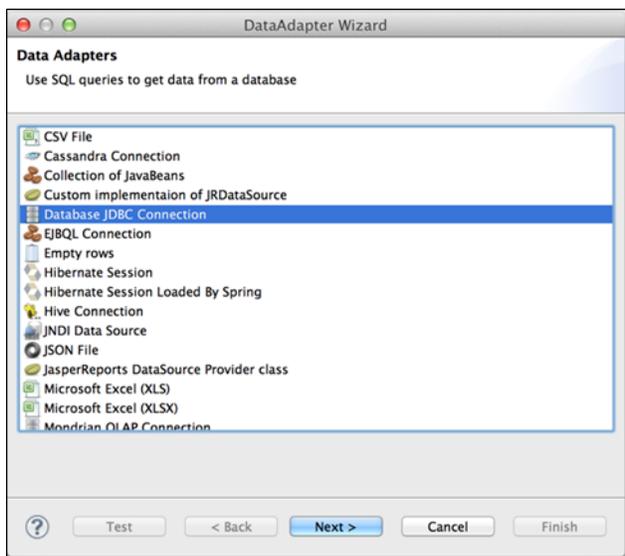


Figure 128

Then click [Next].

On the next screen, enter a name for your database connection.

You can create as many of these as you wish. So if you wanted to see a report for a Test, Production or Shadow server and you have firewall access you could set an adaptor up for each one.

Enter the JDBC connection information.

The most important things are the server IP, the name of the database, and the username and password.

For development you can enter the information as you see it in Figure 130.

And be sure to select the MySQL driver [`com.mysql.jdbc.Driver`]

Caution There is another MySQL driver. Make sure that you choose the one that says: `com.mysql.jdbc.Driver`.

When done click [Finish].

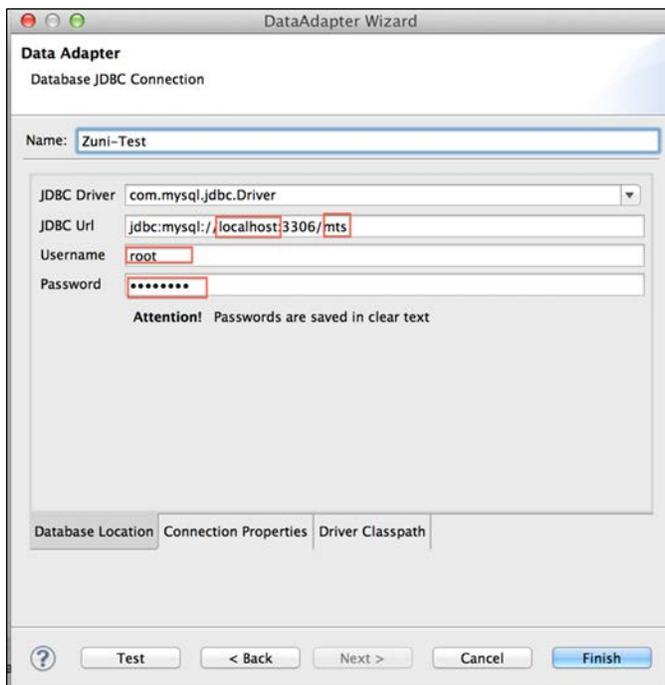


Figure 129

Now to use your adaptor, open up a JRXML file.
It will look similar to Figure 131.

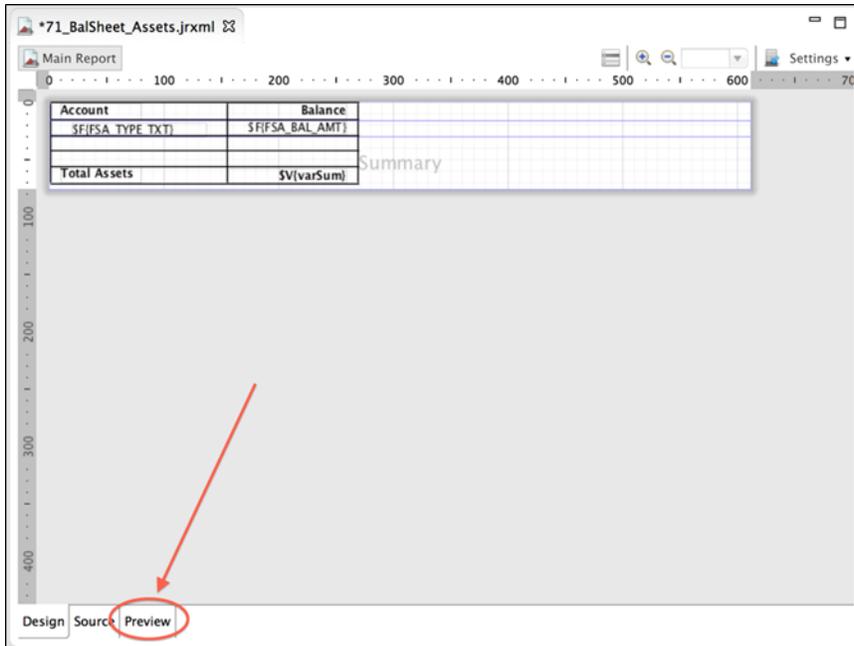


Figure 130

Click on the [Preview] tab at the bottom.

On the top you will see a little triangle, just to the left of the larger Green triangle, that allows you to select the data adaptor.

See Figure 132

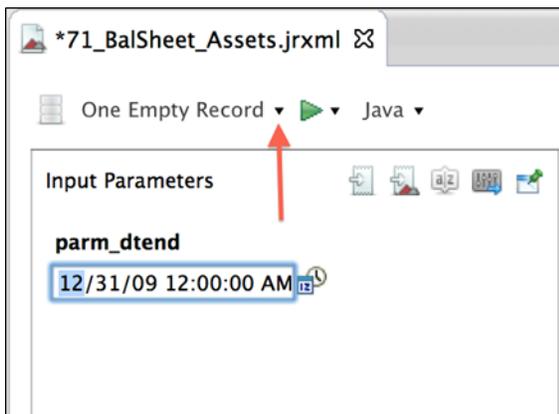


Figure 131

Click on that little triangle and choose a data adaptor. See Figure 133.

If all goes well, you will see your report populated with data from the database.

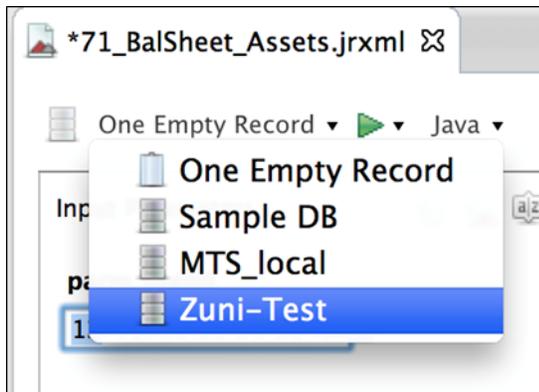


Figure 132

8 Appendix

This section is a capture of required developer libraries in the event that we want to deploy the application on a different server (Tomcat, WebLogic, etc.).

If we remove JBoss as a dependency for compilation we will need the following jars:

Library	Java Class Dependent on it	Project Dependency
Javaee-api-5.0.5.jar	javax.ejb.ApplicationException	EJBApp
	SOAPFaultException	WebApp
	ActivationConfigProperty	EJBApp
Hibernate-annotations-3.40.GA.jar	Org.hibernate-annotations.IndexColumnn	EJBApp
Log4j-1.2.14.jar	Category.java	EJBApp
Bsf.jar	Org.apache.bsf.util.StringUtils <i>Appears that this import is not actually being used. So may not be required if we remove the import</i>	WebApp
Jboss-system.jar	ServiceMIBeanSupport <i>Appears to be required to support the JBoss cache mechanism</i>	