Celtix Installation Guide

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Downloading Celtix

You can download a Celtix distribution package from the Celtix project page on ObjectWeb: `http://forge.objectweb.org/projects/celtix`.

Celtix is provided as an extractable JAR file. You may select either a source or binary distribution. Each distribution is also provided under two licensing agreements: the Eclipse Public License (EPL) and the Lesser General Public License (LGPL).

	EPL	*LGPL*
Source	`celtix-0.4-src-epl.jar`	`celtix-0.4-src-lgpl.jar`
Binary	`celtix-0.4-bin-epl.jar`	`celtix-0.4-bin-lgpl.jar`

Download the version that best suits your needs. Users interested in running the product samples and/or writing Celtix applications should select the binary distribution. Users interested in reviewing the source code, and perhaps contributing to the Celtix project, might choose to use the source distribution.

Installation Prerequisites

Before installing Celtix Milestone 4 you must ensure that the following products, with the specified versions, are installed on your system:

1. JDK v1.5.0_06 (JDK v5.0 update 6) and above. Celtix requires this version of the JDK for compilation and execution.

2. Apache Ant v1.6.5 and above. Ant is optionally used to compile and execute Celtix applications. It is also possible to compile and run Celtix applications using `javac` and `java` directly. For further information on this alternative approach, see the discussion in each sample application's README file.

Java 5 developer's kit

You need to install the J2SE Development Kit (JDK) 5.0, which can be downloaded from the following location:

`http://java.sun.com/j2se/1.5.0/download.jsp`

After installing the JDK, you should set or modify the following environment variables:

`JAVA_HOME` — set this to point at the root directory of the JDK 5.0 installation.

PATH — ensure that your **PATH** includes the **%JAVA_HOME%\bin** directory (Windows) or **$JAVA_HOME/bin** directory (UNIX).

Apache Ant 1.6

Each Celtix sample application includes a build.xml file that will allow you to use Apache Ant to compile and run the application. If you want to use this feature, you must install the Apache Ant 1.6 build utility, which can be downloaded from the following location:

```
http://ant.apache.org/bindownload.cgi
```

After installing Apache Ant, add the **<AntInstallDir>/bin** (Windows) or **<AntInstallDir>/bin** (UNIX) directory to your **PATH**.

The source distribution of Celtix uses Apache Maven to build the Celtix binaries. A Maven installation is provided with the source distribution. For more details, see Installing and Building the Celtix Source Distribution.

Installation Instructions

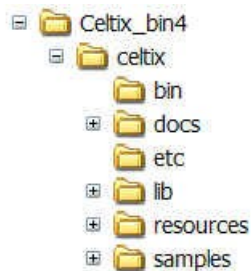You can install Celtix on any operating system that supports the Java 5 platform.

Installing the Celtix Binary Distribution

To install either of the binary distributions, perform the following steps:

1. Download the distribution file to a local directory.

2. Create an installation directory, for example, **Celtix_bin4**.

3. Open a command window and move to the installation directory. Confirm that the **%JAVA_HOME%\bin** (Windows) or **$JAVA_HOME/bin** (UNIX) directory is on the **PATH**.

4. Use the **java** executable to extract the archive. For example:

```
java -jar <path_to_Celtix_binary_distribution_file>
```

5. The extraction process will create the following directory structure.

Installing and Building the Celtix Source Distribution

In order to build Celtix from the source distribution, you must have an active Internet connection, as Apache Maven will attempt to download various artifacts from a public repository at http://www.ibiblio.org/. If you intend to become an active contributor to the Celtix project with a need to frequently rebuild your Celtix installation, you may find it convenient to either use a public mirror repository or to set up you own local repository.
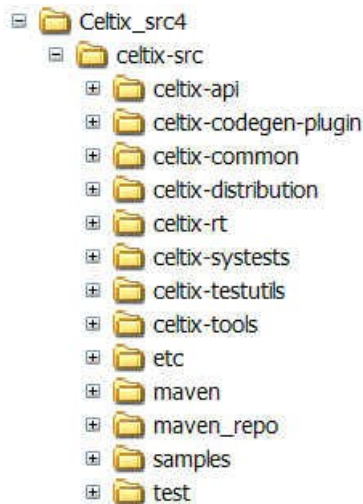
For further guidance, see: http://maven.apache.org/guides/mini/guide-mirror-settings.html and https://wiki.objectweb.org/celtix/Wiki.jsp?page=Maven2Information.

To install and build either of the source distributions, perform the following steps:

1. Download the distribution file to a local directory.

2. Create an installation directory, for example, `Celtix_src4`.

3. Open a command window and move to the installation directory. Confirm that the `%JAVA_HOME%\bin` (Windows) or `$JAVA_HOME/bin` (UNIX) directory is on the `PATH`.

4. Use the java executable to extract the archive.

```
java -jar <path_to_Celtix_source_distribution>
```

5. The extraction process will create the following directory structure.

```
⊟ 📁 Celtix_src4
   ⊟ 📁 celtix-src
      ⊞ 📁 celtix-api
      ⊞ 📁 celtix-codegen-plugin
      ⊞ 📁 celtix-common
      ⊞ 📁 celtix-distribution
      ⊞ 📁 celtix-rt
      ⊞ 📁 celtix-systests
      ⊞ 📁 celtix-testutils
      ⊞ 📁 celtix-tools
      ⊞ 📁 etc
      ⊞ 📁 maven
      ⊞ 📁 maven_repo
      ⊞ 📁 samples
      ⊞ 📁 test
```

6. In order to build Celtix, you must set the environment for Apache Maven. Insure that the following environment variables are set.

Environment Variable	*Value*
JAVA_HOME	JDK installation directory, e.g., `C:\jdk1.5`
CELTIX_INSTALL	Celtix installation directory, e.g., `C:\Celtix_src4`
CLASSPATH	<empty>
MAVEN_HOME	`%CELTIX_INSTALL%\celtix-src\maven` (Windows) `$CELTIX_INSTALL/celtix-src/maven` (UNIX)

MAVEN_OPTS	`-ea -Djava.util.logging.config.file=`
	`    %CELTIX_INSTALL%\celtix-src\celtix-common\src\test`
	`    \resources\logging.properties`
	(Windows)
	`-ea -Djava.util.logging.config.file=`
	`    $CELTIX_INSTALL/celtix-src/celtix-common/src/test`
	`    /resources/logging.properties`
	(UNIX)

PATH	`%MAVEN_HOME%\bin;%JAVA_HOME%\bin;%PATH%` (Windows) `$MAVEN_HOME/bin:$JAVA_HOME/bin;$PATH` (UNIX)

7. Move the the `celtix-src` directory under your Celtix installation directory.

8. To build Celtix, issue the command:
```
mvn install
```

9. This command will build the product and run all of the system and unit tests. To avoid running the tests, use the command
```
mvn -Dmaven.test.skip install
```

10. Now, move to the subdirectory `celtix-src\celtix-distribution` (Windows) or `celtix-src/celtix-distribution` (UNIX) and issue the command:
```
mvn compile
```

Alternatively, you can build JAR files suitable for distribution by issuing the command:
```
mvn install
```

The JAR files will be located in the directory `celtix-src\celtix-distribution\target` (Windows) or `celtix-src\celtix-distribution\target` (UNIX).

Testing the Installation

To test the installation of Celtix, try running the basic Hello World sample application, or any of the other samples.

Setting the Environment for the Binary Distribution

Before you can compile and run the sample applications, you must set the environment so that the directories holding the Celtix, Java, and Ant utility applications are on the `PATH`.

Open a command window and move to the samples subdirectory under your Celtix installation. Insure that the following environment variables are set. If you will be using the Ant build system exclusively, the `celtix.jar` file does not need to be included in the `CLASSPATH` variable.

You may find it convenient to write a script or batch file that sets these environment variables.

Environment Variable	*Value*
JAVA_HOME	JDK installation directory, e.g., `C:\jdk1.5`
CELTIX_HOME	Celtix installation directory, e.g., `C:\Celtix_bin4\celtix`
CLASSPATH	`.;%CELTIX_HOME%\lib\celtix.jar;.\build\classes` (Windows) `.:$CELTIX_HOME/lib/celtix.jar:../build/classes` (UNIX)
ANT_HOME	`<Ant install directory>\apache-ant-1.6.5` (Windows) `<Ant install directory>/apache-ant-1.6.5` (UNIX)
PATH	`%ANT_HOME%\bin;%CELTIX_HOME%\bin;%JAVA_HOME%\bin;%PATH%` (Windows) `$MAVEN_HOME/bin:$CELTIX_HOME/bin:$JAVA_HOME/bin;$PATH` (UNIX)

Setting the Environment for the Source Distribution

Before you can compile and run the sample applications, you must set the environment so that the directories holding the Celtix, Java, and Ant utility applications are on the `PATH`.

Open a command window and move to the samples subdirectory under your Celtix installation. Insure that the following environment variables are set (note the different value for the CELTIX_HOME variable). When using the source distribution, you should use the Ant build system; with this version of the product the Celtix product JAR files are distributed throughout the product directories, and providing an accurate `CLASSPATH` would be challenging.

You may find it convenient to write a script or batch file that sets these environment variables.

Environment Variable	*Value*
JAVA_HOME	JDK installation directory, e.g., `C:\jdk1.5`
CELTIX_HOME	Celtix installation directory, e.g., `C:\Celtix_src4\celtix-src\celtix-distribution\src\main`
CLASSPATH	`.;.\build\classes` (Windows) `.:./build/classes` (UNIX)
ANT_HOME	`<Ant install directory>\apache-ant-1.6.5` (Windows) `<Ant install directory>/apache-ant-1.6.5` (UNIX)
PATH	`%ANT_HOME%\bin;%CELTIX_HOME%\bin;%JAVA_HOME%\bin;%PATH%` (Windows) `$MAVEN_HOME/bin:$CELTIX_HOME/bin:$JAVA_HOME/bin;$PATH` (UNIX)

Running a Sample Application

To build and run the Hello World demonstration, perform the following steps:

1. Open a command window and set the environment.

2. Change directory to `%CELTIX_HOME%\samples\hello_world` (Windows) or `$CELTIX_HOME/samples/hello_world` (UNIX).

3. Enter the command `ant build` to build both the client and server applications.

4. Open a new command window and set the environment.

5. Change directory to `%CELTIX_HOME%\samples\hello_world` (Windows) or `$CELTIX_HOME/samples/hello_world` (UNIX).

6. Enter the command `ant server`.

7. In the first command window, enter the command `ant client`.