Extensible Access Control Framework for Cloud based Applications

Deployment Manual for Configuring Source Code

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Version 1.0

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[Funding Organization]
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Introduction
For using the source code, you need to have the following pre-requisite softwares installed on your system.

1. **Java Development Kit (JDK) (version 1.7)**
2. **Apache Tomcat Server (version 7)**
3. **MySQL Server (version 5.6.16)**
4. **Eclipse IDE (JavaEE, Juno)**
Java Development Kit (JDK)

1. To see if your system already has java installed, open a command prompt window and right the commands as shown in the figure below. (Results will be similar if java is not installed.)

```
C: \Users\testUser>cd
C: \Users\testUser
C: \Users\testUser>cd \java
C: \java >version
'java' is not recognized as an internal or external command, operable program or batch file.
C: >
```

2. Go to the link shown in the figure below for downloading the JDK.

[Link to Oracle JDK download page]
3. Select the type of installer based on your operating system.

4. This section assumes that JDK for **32 bit Windows** operating system was selected. **Save** the installer.
5. After the download is complete, double click the installer to execute it.

6. Depending on your security settings, you may get a warning. Allow the execution.
7. The installation will start. Keep the default settings.
Extensible Access Control Framework for Cloud based Applications
KTH-SEECS Applied Information Security Lab, NUST-SEECS, H-12 Sector, Islamabad, Pakistan.
Tel: 051-90852164, Fax: 051-8317363, Website: http://ais.seeecs.nust.edu.pk/project
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8. Open a file explorer, select right click **Computer** and select **Properties**.

9. Select **Advance System Settings**.
10. Select **Environment Variables**.
11. Click **New** from **System variables**.

Create a new variable named "**JAVA_HOME**" and set its path to the root directory of JDK.
12. Select “Path” variable and click edit.

13. In the variable value field, append “%JAVA_HOME%\bin;” and click ok.
14. To confirm that the JDK is installed successfully, open a new command window and enter the command as shown in the figure below.

```
C:\Users\testUser>cd \
C:\>java -version
java version "1.7.0_51"
Java(TM) SE Runtime Environment (build 1.7.0_51-b13)
Java HotSpot(TM) Client VM (build 24.51-b03, mixed mode, sharing)
C:\>
```
1. Go to the link shown in the figure below, to download the installer. Select **MySQL Community Server**.

2. Select the installer for download as shown in the figure.
3. Start **downloading**. After the download is complete, double click the installer to **execute it**

4. Depending on your system security, you may get a warning. Allow execution to proceed.
5. Select “Install MySQL Products”.
6. **Agree** to the license terms and click **Next**.
7. Follow the instructions and click **Execute**.
8. Click **Next** to continue.
9. Depending on your requirement, choose a setup type and click **Next**.
10. Click **Execute**.
11. Click Next
12. Accept **License** and click **Next**

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License Terms

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Press the Page Down key to see more text.

☑ I have read and accept the license terms.

< Back  Install  >  Cancel
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13. Click Finish
14. Click Next
15. Click Execute
16. Click Next
17. Click **Next**
18. Click Next
19. Set Password as “root” and click Next. If you want to use any other password you will then have to change the following statement in `com.aislab.accesscontrol.core.ui\src\hibernate.cfg.xml` accordingly.

```xml
<property name="connection.password">root</property>
```
20. Select **Standard System Account** and click **Next**
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21. Now click **Next** to continue.
22. Click **Next** again
23. Click Finish
24. MySQL workbench will start automatically. Click on Local instance.

25. Set “root” as password.
26. Select Data Import / Restore.
27. Select **Import From Self-Contained File**.

![Image of Import From Self-Contained File]

28. Browse to **import** the `.sql` file. This sql file contains the schema of XACML based ABAC model. The file can be downloaded from [http://ais.seecs.nust.edu.pk/project/downloads.php](http://ais.seecs.nust.edu.pk/project/downloads.php)
29. Click Start Import.
30. Make sure that the import is successful.
31. After refreshing, the newly created database will be shown.
Apache Tomcat Server

1. Go to the link shown in figure below to download installer.

2. Select the installer as shown in figure below.
3. **Save** the installer.

![Opening apache-tomcat-7.0.52.exe](attachment://Opening.png)

You have chosen to open:

- **apache-tomcat-7.0.52.exe**
  - which is: Binary File (8.9 MB)
  - from: http://stingray.cyber.net.pk

Would you like to save this file?

- [ ] Save File
- [ ] Cancel

4. After the download is complete, double click the installer to **Execute it**.

![Library](attachment://Library.png)

- History
- Downloads
- Tags
- All Bookmarks

- **apache-tomcat-7.0.52.exe**
  - 8.9 MB — apache.org — 11:11 PM

5. Depending on your system security, you may get a warning. Allow execution to proceed.

![Open Executable File?](attachment://Open.png)

"apache-tomcat-7.0.52.exe" is an executable file. Executable files may contain viruses or other malicious code that could harm your computer. Use caution when opening this file. Are you sure you want to launch "apache-tomcat-7.0.52.exe"?

- [ ] Don’t ask me this again

- [ ] OK
- [ ] Cancel
6. Click **Next**.
7. **Agree** the License Agreement

![License Agreement]

8. Click **Next**.
9. Keep the **default settings** and click **Next**.
10. Keep the **default path** and click **Next**.

11. Keep the **default path** and click **Next**.
12. Wait for the setup to be installed. It may take some time to complete.
13. Click Finish.

15. To ensure that the server is started correctly, open your browser and type “localhost:8080” in the address bar.
Eclipse IDE

1. **Download** the setup from the [link](http://www.eclipse.org/downloads/) as shown in figure.
2. Select Juno Packages.

3. Select the appropriate operating system. In this case, 32-bit Windows operating system is used.
4. **Save** the setup.
5. After the download is complete, right click the downloaded folder and select **Extract Files** to extract the compressed files.
6. Click **Extract**.
7. After the extraction is complete, Open the extracted folder.
8. Double click the **eclipse** application.

9. It starts loading.
10. Change the workspace from the default workspace if needed.

11. Close the Welcome screen.
12. Select **Window -> Show View -> Server**, if the **Server View** is not already displayed.
13. In the Servers View, select **new server wizard -> New -> Server.**
14. Choose **Apache** as the type of server and click **Next**.
15. Select **Tomcat 7** as the server type and click **Next**.
16. Click browse to select the **Tomcat Installation Directory**.
17. Select the tomcat installation directory and click Ok.
18. Click **Next**.
19. Click Finish.
20. A new Tomcat server instance will be created as shown in the figure below.

21. Open the folder containing the downloaded source code.

<table>
<thead>
<tr>
<th>Name</th>
<th>Date modified</th>
<th>Type</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>com.aislab.accesscontrol.core.ui.zip</td>
<td>2/20/2014 3:54 PM</td>
<td>Compressed (zipped file)</td>
<td>21,454 KB</td>
</tr>
</tbody>
</table>
22. Right click the compressed folder and select **Extract Files**.
23. After extracting the source code, in Eclipse go to File and select Import.
24. Select **Existing Projects into Workspace** and click **Next**.
25. Click browse to select the root directory from which project is to be imported.
26. Select the root directory of the project and click Ok.
27. Click Finish.
28. The project is imported into the Eclipse workspace. It may give errors or warnings as shown in figure given below depending on the Eclipse preferences.
29. Select **Window -> Preferences.**
30. In the Preferences windows, select Web -> JavaServer Faces Tools -> Validation.
31. Uncheck the “Validate EL on Build/Run Validation” option and click Apply and then Ok.
32. After changing the preferences, clean the project by selecting **Project -> Clean option**.

33. **Select** the project to be cleaned and click **Ok**.
34. After cleaning the project, right click the project and select **Run As -> Run on Server**.
35. Select the **Tomcat Server** and click **Next**.
36. Click Finish.

37. The Console view will display the successful startup of Tomcat Server as shown in the figure.
38. Eclipse will automatically open the main page on the default browser. If it does not happen automatically you can use \textit{http://localhost:8080/com.aislab.accesscontrol.core.ui/} to launch the application.

39. While generating XACML Policy or PolicySet, you can change the path to corresponding repository by changing the appropriate properties in \texttt{com.aislab.accesscontrol.core.ui/src/path.properties} file.