

Kalibro (Version 1.0) Installation Guide

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1 INTRODUCTION

Source code metrics have been proposed since 70s, but they have not been fully used in software development. One reason is that most metrics do not have known thresholds. Metric tools show isolated numeric values, which are not easy to understand. Also, the interpretation of these values depends on the context.

Kalibro aims to improve the use of source code metrics. It is designed for easy integration with a metric collector tool and show the results in a friendlier way. For that, it allows a metric specialist to create a configuration of thresholds associated with qualitative evaluation, including comments and recommendations. These configurations are used to enhance metric results interpretation.

Kalibro is delivered with the proper configuration to run using Analizo (www.softwarelivre.org/mezuro/analizo) - a free and multi-language toolkit - as the source code analysis tool. Analizo supports the extraction and calculation of a fair number of source code metrics, generation of dependency graphs, and software evolution analysis. It efficiently parses source code written in C, C++ and Java.

In order to have an easy-to-use tool which provided information for multi-language source code, Analizo was designed to support the use of external tools as extractors. Doxyparse is the main extractor and grants great performance. It is based on Doxygen, a widely used open source tool for the generation of documentation through the code comments made in many programming languages (complete list on www.doxygen.org).

Kalibro Desktop provides Kalibro features with a graphical user interface. Usually, projects and configurations are stored on a database, and it is required to have the metric collector tool installed locally. Although, Kalibro features may also be provided as a Web Service and Kalibro Desktop can be used as a graphical client of this service.

Kalibro Service is the service which provides Kalibro features. Through extractors, it can be connected to Spago4Q (www.spago4q.org) – a free platform to measure, analyze and monitor quality of products, processes and services.

2 INSTALLATION PACKAGE DESCRIPTION

Files referred in this guide can be obtained at the [Kalibro Website](#).

2.1 Installation prerequisites

For using Kalibro Desktop as a client of Kalibro Service, the only prerequisite is the [Java Runtime Environment 1.6](#) and a connection to the machine where Kalibro Service was installed.

In order to run Kalibro locally (either via desktop application or web service installed on your machine) you will also need access to a [MySQL Server](#), besides installation and implementation of a collector to a metric results provider tool. Kalibro package already contains the implementation of a collector for the [Analizo](#) metric tool, so you will probably want to install it.

If you are installing Kalibro Service at your machine, you will also need the [Apache Tomcat 6](#) servlet container.

3 INSTALLATION

3.1 Kalibro Desktop

1. Download and run `KalibroDesktop.jar` (`java -jar KalibroDesktop.jar`)
2. Access the menu *Settings->Edit*
3. If the check box *“Use as service client”* is unchecked, Kalibro will run locally and you will need to configure the metric collector and database as explained for Kalibro Service.
4. If you opt for using Kalibro Desktop as a service client, you will need to edit:
 - The service endpoint (`http://<url>/KalibroService/`), where `<url>` is the address of the server where KalibroService is installed
 - Listener latency: after requesting project results for the Kalibro Service, Kalibro Desktop keeps requesting the project state to know when the analysis is done. This parameter is the time, in milliseconds, between these requests. Adjust this according to the speed of your connection.

3.2 Kalibro Service

1. Download `KalibroService.war` and put it at the `webapps` directory of your Tomcat installation
2. Create an empty MySQL database for Kalibro, and a MySQL user with all privileges at this database
3. Download `kalibro_ini_setup.sh` script and run it in order to generate the `~/.kalibro/kalibro.ini` configuration file for the service. As alternative, download `kalibro.ini` file and put it on a directory named `.kalibro` inside your home directory. Edit the settings as explained below:
 1. `metric-collector` is the class used to obtain the metric values. Put `org.software.analizo.AnalizoMetricCollector` if you want Analizo as the metric collector tool. This class runs Analizo and parses its output. You can implement the `MetricCollector` interface and use it to run Kalibro with another metric collector tool.
 2. `loader-directory` is the path to the directory where the submitted projects are going to be checked out. If the specified directory does not exist, it will be created.
 3. `maintain-sources` specifies if the downloaded projects are going to be deleted after analysis. Change to `no` if you want the projects source code to remain at the downloads directory.
 4. Database section: here you have to specify the parameters of the database you configured at the previous step.
4. Start tomcat

5. Kalibro Service should be running. To check, open with your browser the page `http://<container_url>/KalibroService/`

3.3 Spago4Q integration

1. Download `kalibro-spago-extractors.jar` and put it at `SpagoBI/WEB-INF/lib`
2. Check if all dependencies of Kalibro Extractor (listed on Kalibro Website) are on Spago classpath. Be careful with different versions of the same library.
3. Restart Spago tomcat
4. Download `KalibroExtractorsConfiguration.zip` and import it as extractors on SpagoBI. Edit the extractors operation parameter relative to the service endpoint
5. Download `KalibroKpiDocument.zip` and import it on SpagoBI
"Tools"->"Import/export"

References

- [1] <http://subversion.apache.org/>
- [2] <http://softwarelivre.org/mezuro/analizo>
- [3] <http://www.spagoworld.org/xwiki/bin/view/SpagoWorld/>