Business Rule Maintenance Web Application

Documentation

Version 0.1

Inhaltsverzeichnis

General Overview

The Business Rules Maintenance web application allows to create, update and delete projects, rulegroups, subgroup, rules and actions. These are used to define a logic with the purpose to execute that logic (rules) against a set of data.

The web application exports a project to a zip file which can directly be executed with JaRE – the Java Rule Engine.

The ruleengine JaRE is written in Java and can run either standalone from the command line or may be embedded in other Java related projects. It may be embedded in other tools or web applications.

The main goal of using a business rules and ruleengine approach is to separate the IT logic from the business logic. This way both types of logic can be managed individually and by the relevant domain experts: IT expert or business expert. This creates a proper division of responsibilities, makes IT code cleaner and easier to maintain and thus adds to the overall quality and agility of the system.

By seperating IT and business logic, the business user is not confronted with business rules being mixed with complex IT code or work flows. This enhances the transparency for the user.

This document explains the installation, configuration, concepts and usage of the web application.

Prerequisites

To use the web application following prerequisites have to be met:

- Java: The Business Rules maintenance web application is written in Java. It comes in the form of a .war file (web archive).

- Tomcat: Tomcat allows to run Java code on the server side. Any other tool with the same capabilities and allowing to use .war files may also be used.

- MySQL/MariaDB: The web application stores configuration and all data entered by the user in a MySQL database. Other dialects of MySQL such as MariaDB may also be used.

It is assumed that the user – before running the Business Rules Maintenance web application - has a running version of Java, Tomcat and MySQL already in place.

The web application uses the JaRE Java library. In case you want to use/install a newer version of this library see the section "Software Updates".

Installation

1. MySQL/MariaDB: database setup

The first step is to download the schema of the database. The schema contains the definitions of the required database tables and some base configuration data.

Import the database schema into the running MySQL/MariaDB instance by issuing following command on the command line:

> *mysql -u [user] -p < ruleengine_rules.sql*

Replace "[user]" in the command with an existing user that has sufficient rights to import the database schema and create the database, tables, indexes and data.

If your MySQL/MariaDB server does not require a username and password then leave out the apprropriate parameters in the command.

2. Apache Tomcat: install the web application

Download the Business Rules Maintenance web application .war file.

Locate where in your system Apache Tomcat is installed. It contains a folder labeled "*webapps*". Copy the .war file into the "*webapps*" folder. Usually Tomcat automatically expands the war file (installs it) and the web application is immediately available. If this is not the case you might have to restart Tomcat.

Open a webbrowser window and enter following URL (address):

> *http://localhost:[port]/rule_maintenance/*

If Tomcat is running on a different server (not localhost), replace "*localhost*" with the server ip address or the hostname for that server. Tomcat usually runs on port 8080. If unsure, check with your Tomcat configuration, which port is used.

You should now see a page of the Business Rule Maintenance web application. On first startup you may be presented with a configuration page. Enter the details for the database configuration: the host of the MySQL/MariaDB server and the port, the name of the database (the default is: "ruleengine_rules"), the user to access the database and the user password. Finally click on "save" to save the configuration.

Next you will be presented with the login page. If not, click on "Login" in the menu on the left-hand side. Now enter the userid and password for the web application. The default userid is *admin* and the password is also *admin*.

Menu

The menu is located on the left side of the web application and is always visible. It allows the user to navigate through the application.

Below is a short description of the individual menu items.

Start Page

The Start Page is the first page a user is directed to after starting the web application or loging into the application.

Password

Allows to change the password of the user. If the application is configured to use LDAP, then a change of the password from within the application is not possible.

Login/Logout

The web application requires users to enter a userid and password to authenticate. On login it is determined to which groups the user is assigned. The user settings steer to which project users have access.

Projects

Projects is the central place to work with projects, to create, update or delete rulegroups, subgroups, rules and actions.

History

When working with the web application, certain actions of a user are captured. The history allows the user to quickly access these captured actions and so the history acts as a shortcut to allow quicker navigation.

Export File

Allows to export a project. The file created is a regular zip file and contains all rulegroups, subgroups, rules and actions for a given project. The resulting zip file can be used directly with the ruleengine to execute the rules.

Import File

Allows to import a project that previously has been exported.

Checks

Rules use predefined checks to achieve their task. One rule uses one check at a time. By combining rules with different checks a complex logic can be built.

An example for a check is „is equal to", „is greater than" or „is not null".

Files

The web application uses Beanshell scripts and Apache Velocity templates to seperate the programming logic of the web application from its representation on the screen. In the Files section a user with administrative rights can change the web application code or display on the fly.

Groups

Groups define a collection of users that have the same access rights to projects. Different groups can contain different users and these can access different projects.

Users

A user can be assigned to one or multiple groups.

Configuration

The configuration defines the details of the connection of the web application to the database and optional LDAP settings.

About

The about page shows information about the web application.

Concepts

This section explains the concepts that build the base for this web application. It is also related to the concept of the ruleengine that is used when the rules are executed against a set of data.

Group Management

User Management

Project Management

Checks

Configuration

Import Project

Export Project

History

User Avatar

The user may choose a picture for his/her representation. It is shown on the upper right-hand side of the web application. Clicking on the picture – or the default picture if undefined – will allow the user to upload a picture to be used as the users avatar.

Help

In various places/screens of the web application, there is help available identified by a little icon with a question mark inside:

Click on the icon to display a short help text.

Projects

Rulegroups

Subgroups

Rules

Actions

Pentaho PDI

The web application can produces/export a project and all relevant settings and data to a single zip file. This file can be used with the JaRE ruleengine. Note that it is not required to use any Pentaho software to do so.

But there is a certain integration of the ruleengine with the ETL tool from Pentaho. This tool is called Pentaho PDI or also Pentaho Kettle (previous/old name). There are plugins available for Pentaho PDI which make it very easy to use and interact with the ruleengine. This helps the ETL developer and designer to seperate his code from business rules and allows for cleaner design and code.

The ruleengine plugins for Pentaho PDI are available through the Pentaho marketplace. They can easily be installed through the interface of the ETL tool.

Workflow

Software Updates

The Business Rules Maintenance web application uses several software libraries. If a newer version of these libraries is available it might be possible to replace the existing ones. This depends on the compatibility of the newer libraries with this web application code.

The libraries are located in following folder:

[Tomcat root folder]/webapps/rule_maintenance/WEB-INF/lib

Updates to the base components of Java, Apache Tomcat and MySQL/MariaDB should in general be possible without interference to the web application.

Contact

For questions or feedback please contact me.

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Links

Below is a list of links to software or web pages references in this document.

- MySQL/MariaDB database schema:

  Link: https://github.com/uwegeercken/rule_maintenance_db

  Download file: ruleengine_rules.sql

- Business Rules Maintenance web application .war file

  Link: https://github.com/uwegeercken/rule_maintenance_war

  Download file: rule_maintenance.war

Defaults

Listed below are defaults that the web application uses.

- Business Rules Maintenance application default login

  userid: *admin*

  password: *admin*

- Database name: *ruleengine_rules*

Stichwortverzeichnis