

Business Problem Overview

Remaining competitive amidst changing business environment is one of the biggest challenges faced by organizations today. Changes in competitive factors ultimately result in changes in business rules. Frequent changes to business rules increase the cost of maintenance, enhancement and customization: a problem seen across verticals; be it insurance, finance, healthcare, mobile, e-governance, network management or process control. Such a scenario calls for flexibility in administration and maintenance and real-time responsiveness to changes in business requirements.

QuickRules BRMS Overview

QuickRules addresses the above requirements of organizations with tools for Rule Development, Testing, Deployment, Execution, and Maintenance. QuickRules reduces maintenance and enhancement costs by cleanly separating business rules from application code. QuickRules provides the ability to define and present business rules in a Natural Language like format empowering business users to work with runtime business rules in applications.

Highlights

- UI that **facilitates high productivity** compared to any other rule engine in the market.
- A powerful easy to use interface to create Tasks, Decisions & Flows without **learning any proprietary** language.
- Option to define rules in simple **natural language like** format.
- Decision Tables to manage your rules in **spreadsheet format** – very short learning curve.
- Flexible rule creation and editing environment
- Rules, Rulesets and decision tables **chaining** with the help of 'flows'
- JSR-94 Compatibility (Java Rules Engine API)
- Powerful **Event Detail API** for detailed information on rule invocation
- **Customizable** web-based interface for **business users**
- **Consistency check** of rules for Business Users
- Supports almost **all J2EE compliant application servers**
- **Open XML format** for storing rules
- Business rules definition on **XML objects**
- **Scenario-based** testing environment
- **Invocation date** settings at **runtime** for firing rules
- QuickRules **Builder** available as an **Eclipse Plugin**
- Availability of a **Service API** to work on the Rule Object Model
- Seamless integration with popular **version control systems(CVS, VSS, SVN etc)**
- An EJB component for ISVs to embed it within their applications and their enterprise applications.

This document showcases how QuickRules assists methodical creation of rules base for change management, improves productivity, there by reducing huge operational costs.

Note: Features marked * are added in this version

Rule Building

Support to Define Business Rules on XML Objects

As organizations try to achieve compliance with new industry-wide regulations, they are recognizing the importance of XML as a key technology for their systems-integration strategy. To handle this requirement, QuickRules provides support to use information stored in XML documents to design, create, and manage business rules. This helps handling information systems that primarily deal with business objects in the form of XML documents.

Clean Separation of Business Rules

At the core of any rule-centric approach is the ability to separate business rules and related processes from the application code. QuickRules helps architects separate business rules from the application code and provides sophisticated tools to integrate seamlessly into applications.

Project-Based Environment

The project based environment of QuickRules helps Rules Architects group the separated business rules. This easy-to-use Integrated Development Environment (IDE) simplifies the rules development (designing, creating and testing) and deployment.

Grouping Rules in Rulesets/FlowRulesets

QuickRules allows categorizing domain related business rules into logical groups called Rulesets/FlowRulesets. They promote business rule reuse across the application and optimize performance of the Engine.

Multiple Rule Representation Options

QuickRules provides multiple rule representation options to suit varied rule implementation requirements –rate calculation rules, rules for recommendation, rules for internationalization and localization, personalization rules, exceptions or special rules, decision rules, optimization/configuration rules, validation rules etc. The options are

RETE Rules for Free form IF-Then Rules

If your rules can be represented as a collection of If-Then statements (as in the case of recommendation rules, internationalization and localization rules, personalization rules, validation rules) and they can be controlled using priorities and mutual exclusions, you can use this implementation.

RETE algorithm is acknowledged to be among the most efficient in many pattern search algorithms.

Decision Tables for complex rule execution

Decision tables provide the ability to construct and update conditions and actions for rules as a table. Decision tables can be used to manage hundreds of rules in a compact grid, similar to a spreadsheet. Typical examples of decision tables include actuarial tables and tables used to calculate prices and rates. Decision tables allow users to map policy governing tables that they use in their business.

FlowRulesets for sequential rule execution

FlowRulesets allow you to create and edit rule execution sequences diagrammatically, thereby making the sequence of events intuitive and easy to understand i.e. group rules into a series of tasks and control the order of rule execution. Additionally, FlowRulesets allow reusing rules, decision tables, and flow elements thereby allowing you to chain rules to meet complex rule modeling requirements. A FlowRuleset consists of flows (sequence of steps to be executed) that have sub-flows, decisions, tasks, rules, and decision tables, and other Rulesets.

Conflict Resolution

Complex business rules may involve conflicting goals which need to be resolved. A business entity may be involved in conflicting policies/rules. **Mutual Exclusion** is a feature available in QuickRules which enables resolution of conflicts among rules.

Date Support

QuickRules' date affectivity feature helps you time your rules execution. This eliminates the need to develop and execute rule when there is a need. Instead, you can develop rules and QuickRules executes them at the appropriate time.

Feature Overview

Capturing Dependencies between Rules

You can capture dependencies (both positive and negative) between rules using preconditions. By specifying a rule as a precondition to another, you can ensure that a rule is satisfied only if the precondition rule is also satisfied.

Achieving Rule Reuse

You can achieve business rule reuse by creating base rules which are common to all Rulesets. These rules can be used as preconditions in individual Rulesets, thereby avoiding duplication.

Reusing Values as Definitions

You can create definitions that are results of complex arithmetic operations. These triggers could then be reused across all the rules. Variable Definitions are like variables in a programming language that could be used across the Ruleset.

Rule Testing

Testing and Debugging

QuickRules provides extensive debugging and profiling tools to help developers in debugging their rule-centric applications designed with QuickRules.

Simulated Scenario Based Testing Environment

Scenarios created in Builder help you simulate application environment and serve as a unit test framework for your business rules. Scenarios ensure repeatability in test cases thereby providing greater reliability to test business rule changes.

Customizable Rule Consistency Check

The Rule-based consistency check provides business users the framework to perform various checks while building rules. As you build you may create or edit rules that may not be complete or have inconsistencies in them (incorrect/incomplete/repeated conditions or actions, potential rule subsumptions). Exhaustive checks can be performed using the default set of consistency checking rules when the business users edit rules in the WebEditor. Custom checks can also be added.

Rule Deployment

QuickRules as a WebService

You can access QuickRules as a WebService to process requests from Java, VB, or any other client that has the capability to make a WebService request. QuickRules WebService can be deployed on popular servlet Engine or application server and can be configured to invoke the Engine or the EJB Rules Engine.

Deployment on Application Servers

QuickRules supports almost all the major application servers. The QuickRules deployment procedure in EJB mode is dependent on the type of application server you use. The application servers supported are:

- IBM Websphere Advanced 5.1.1.x, 6.0.2.3
- IBM WSAD 5.x
- BEA Weblogic 7.0, 8.1, 9.0
- JBoss 3.2.x and 4.0.x
- Oracle 10g AS
- SunOne Application Server 7.0
- Pramati 4.1.

Deployment on all JDBC compliant Databases

You can deploy your rules schemas on MSSQL, Oracle, MySQL, Sybase, DB2

*** Export to production is made optional.**

With QuickRules exporting changes to production can be made optional. When a user chooses not to export to production, a new version of the Ruleset is created in the data store, but not put into effect. Users can approve the new version for production at a later time.

Rule Editing

*** Export data from Decision Tables to Microsoft Excel.**

Business users who are comfortable with Microsoft Excel can now export QuickRules Decision Tables to a spreadsheet file from WebEditor. This helps a user edit Decision Tables offline using a familiar tool and enables sharing of the table. This feature is particularly useful and effective in the case of large tables, when editing in a web page can be cumbersome.

Find and replace

When you have huge base of rules, change management will not be effective as you need to search the complete system and make changes to all the rules concerned. With Find and Replace option you can search your entire rule base and replace those values as required.

Show Usage

Before you edit any QuickRules entities, you can check their usage in other entities. This reduces errors in your business rules.

Rule Execution

Firing Rules in Retrospective

Changing business needs cause rule change and new versions being created. A business need, in future, might require you to use an earlier version of the rule that was valid at a certain time of the year. **Admin Console** helps you fire rules in retrospective, as and when required, without reverting to earlier versions.

Retaining Execution Design of Native Applications

When QuickRules is integrated with business process automation systems, the execution of rules is controlled by the design of the application. QuickRules provides strategic options to track and control rule execution.

Rule Maintenance

Version Control and Audit Trail

Helps track individual rules and sets of rules as they change over time, and to verify the state of a rule as of any given transaction by keeping each version of a rule in the rule repository, and tracking when each version was deployed and active. The versioning system can also track the identity of each individual who changed a rule, as well as required annotation of the changes.

Integrates with popular version control system like CVS, VSS etc

Compare and Merge

Merge tool helps you resolve the differences between the two versions and generate a final conflict-free version. Differences between two instances of the same QuickRules entity, located at different locations (database) can be viewed and resolved.