



Feature List | As of 01.2012

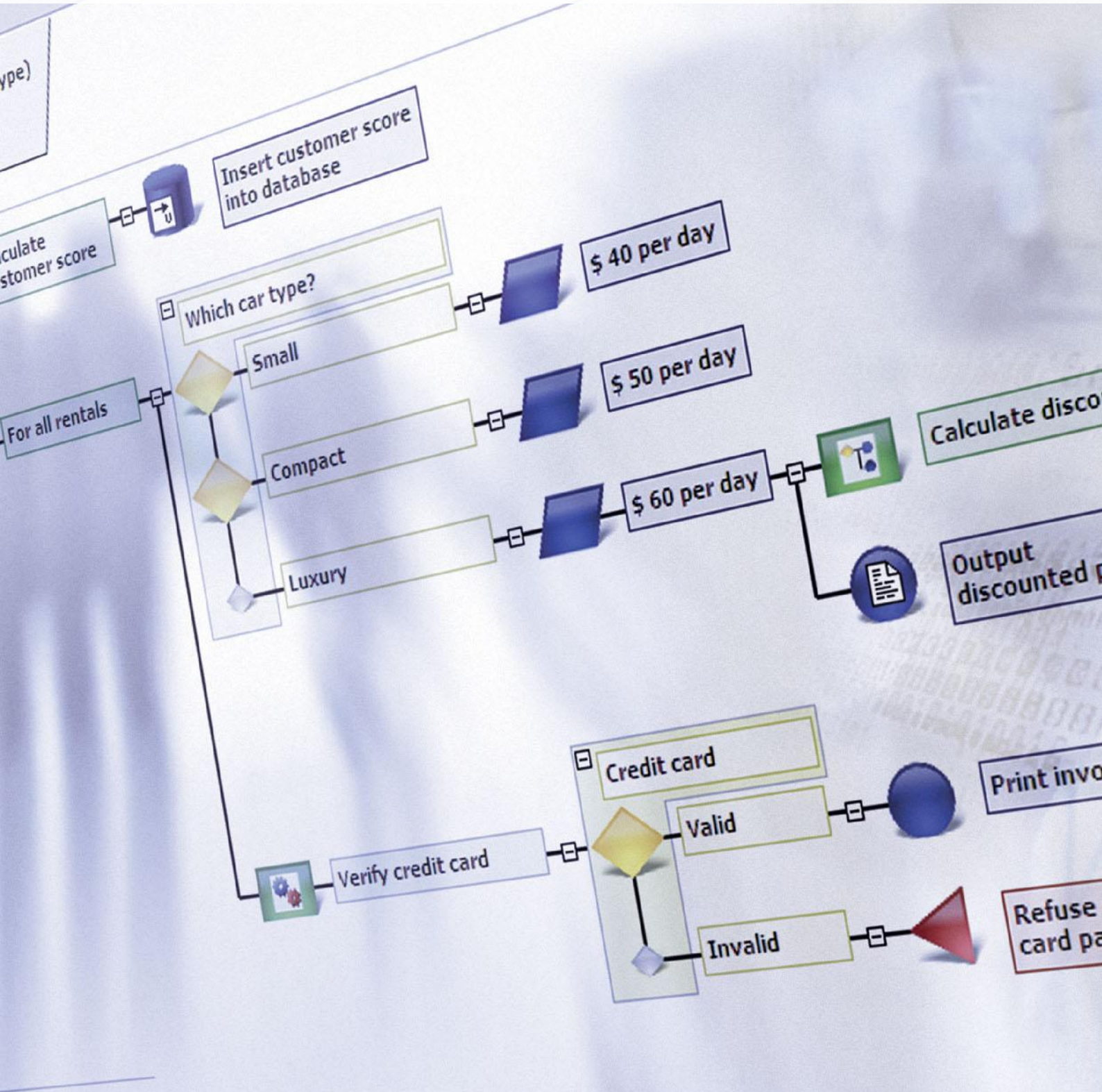
Visual Rules

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Visual Rules Modeler

Graphical Rule Editor

- ▶ Graphical display and editing of flow rules and decision tables with drag&drop
- ▶ Rule context palette for quick access to rule-specific data and tests
- ▶ Hover palette for quick insertion of rule elements
- ▶ In-place editing of rule expressions and descriptions
- ▶ Live syntax check and syntax highlighting
- ▶ Code assist to quickly access available data, operators and functions
- ▶ Automatic validation and consistency checks for rules
- ▶ Rule drafting mode (edit descriptions and/or notes only)
- ▶ Display of statistics (number of visits, percentages, timings) in the rule editor
- ▶ Dynamic layout and zoom
- ▶ Undo/redo of changes
- ▶ Hyperlinks and tooltips for expressions, data, functions etc.
- ▶ Automatic creation of data elements, types, actions etc. when first used
- ▶ Automatic refactoring of rules after renaming elements
- ▶ Editorial notes attachable to rule elements
- ▶ Comments and links to external documents for every rule element
- ▶ Outline view of rule for quick navigation
- ▶ Collapsible/expandable rule branches
- ▶ Multi page printouts of flow rules and decision tables
- ▶ Export of rules as JPG, PNG or BMP
- ▶ Support for rule artifacts (packaged JARs)
- ▶ Automatic extraction of flow rule branches into new flow rules
- ▶ Automatic conversion of decision tables to flow rules and back
- ▶ Creation of flow rules based on Java interfaces

Rule Management

- ▶ Rules and rule models can be hierarchically structured using rule packages
- ▶ Rule packages can contain any number of rules
- ▶ Multiple rule models can be opened simultaneously
- ▶ Rule packages can import other rule packages and models for reuse of rules, data types, functions, action types and services
- ▶ Rule browser to quickly find and open any rule
- ▶ Contextual rule model search in names, descriptions, notes or expressions
- ▶ Interactive visualizations of rule and rule package dependencies
- ▶ Search for usages of every rule, data element, action
- ▶ Graphical compare and merge views for rules and rule packages
- ▶ Editorial notes attachable to every element of a rule model
- ▶ Comments and links to external documents for every model element
- ▶ Export of rule model documentation as multi-page HTML or PDF
- ▶ Rule models can be managed in a version control system or Visual Rules Team Server
- ▶ Any Eclipse integrated version control system can be used
- ▶ Full Maven support to resolve dependencies between rule projects and other artifacts
- ▶ Versioning scheme to manage different versions of the same rule project, each with its own dependencies.
- ▶ Visualizing the usage of rules and their elements in a matrix

Visual Rules Modeler

Flow Rule Elements

- ▶ Decision with two exits (if – then – else)
- ▶ Decision with more than two exits (switch – case)
- ▶ Fire Action to define the results of decisions
- ▶ Assignment to define computations
- ▶ Call Rule and Call Decision Table to reuse other rules
- ▶ Call Service to invoke external services
- ▶ Repeat and End Repeat to apply rule parts multiple times
- ▶ Return to skip or terminate rules
- ▶ Return Exception and Handle Exception to capture exceptional situations

Decision Table Elements

- ▶ Decisions with any number of conditions
- ▶ Unlimited nesting of decisions both to the left and at the top of the decision table
- ▶ Assignments to define outputs (constant or dynamic)
- ▶ Fire Action to trigger execution of specific actions
- ▶ Return Exception to indicate illegal condition combinations
- ▶ Execution of single or multiple matching conditions allows to create score cards

Actions

- ▶ Output to a file or to the screen
- ▶ Output to a CSV file (comma separated values)
- ▶ Output log message
- ▶ Send e-mails
- ▶ User defined actions to trigger any custom functionality or to connect to other systems

Functions

- ▶ Arithmetic functions
- ▶ String functions
- ▶ Date and time functions
- ▶ Functions for lists and collections (select, slice, sort, exists, filter, avg, sum, min, max etc.)
- ▶ User defined functions on any built-in or custom type

Data

- ▶ Definition of input/output data and actions for each rule, rule package or rule model
- ▶ Definition of internal and constant data for each rule, rule package or rule model
- ▶ Flexible data visibility on rule model, rule package or rule level
- ▶ Basic data types (Float, Integer, Boolean, String, Date, Time, Timestamp)
- ▶ User defined data types
- ▶ Structured data types
- ▶ Enumerations
- ▶ Type aliases
- ▶ Support for inheritance
- ▶ Automatic import and synchronization of Java object models
- ▶ Support for Collections (Collection, List, Set)
- ▶ Support for Maps
- ▶ Support for Java 5 Enums and Generics
- ▶ Definition of meta data on several rule model components

Rule Execution

- ▶ Rules are immediately executable from within the modeling environment
- ▶ Execution statistics and –protocols (rule request or session level)
- ▶ Graphical display of execution statistics including execution paths and execution times (profiling)
- ▶ Execution via API for individual processing

Rule Test

- ▶ Integrated test editor to define test cases for rules
- ▶ Editors for test data and expected results
- ▶ Configuration and execution of tests
- ▶ Graphical display of test results and deviations from the expected results
- ▶ Test suite editor to define test suites and to execute all the tests in the test suite
- ▶ Service mocking during tests

Debugging

- ▶ Graphical debugging of locally or remotely executed rules
- ▶ Breakpoints in flow rules and decision tables
- ▶ Display of current data during rule execution

Java Code Generator

- ▶ Java code generator turns rules into Java source code
- ▶ Java code is lightweight, stateless and multithreading capable
- ▶ Rule code has very high performance, ideal for mass data handling
- ▶ Rule code can be directly integrated into applications (no server required)
- ▶ Incremental code generation ensures that code is only generated for changed rules

APIs and Extensibilities

- ▶ API to integrate and call generated rule code (stateful rule sessions and rule requests)
- ▶ API to integrate custom functions
- ▶ API to integrate custom actions
- ▶ API to integrate custom user interfaces into the Modeler for custom actions and functions
- ▶ API to integrate custom services
- ▶ API for statistics and profiling (request scope and session scope)
- ▶ API to import and merge external data models

Online Help and Documentation

- ▶ User interface, online help and documentation available in English
- ▶ Tutorial and sample projects included
- ▶ Included wizard for support requests and bug reports

IDE Integration

- ▶ Eclipse 3.4, 3.5 and 3.6

Import

- ▶ Visual Rules 3.x project import
- ▶ Wizard for importing Excel sheets as decision tables
- ▶ CSV file import for static data
- ▶ Test data import for rule tests

State Flows

- ▶ Graphical editor for modeling State Flows with drag&drop
- ▶ Simple State Flow example showing the basic modeling concepts
- ▶ Automatic validation and consistency checks for State Flows
- ▶ Java code generator turning State Flows into Java source code
- ▶ Execution API for executing State Flow models

Visual Rules Team Platform

Rule Repository

- ▶ Centralized rule repository
- ▶ Simultaneous rule authoring by multiple users without conflicts
- ▶ Easy publishing and synchronization of changes from different users
- ▶ User- and team-based permissions on every level down to individual rules
- ▶ Full version history and audit log
- ▶ Visualization, compare and merge of any rule model revisions
- ▶ Regular file support (e.g. Word documents can also be stored and versioned)
- ▶ Searching for rules or any other resources based on specific criterias
- ▶ Rule repository stored in databases (MySQL, DB2, Microsoft SQL Server, Oracle and Apache Derby)

User Administration

- ▶ Administration of users, teams and roles
- ▶ Usage of external User Management systems e.g. LDAP
- ▶ Assignment of pre-defined roles to users to fulfill specific tasks

Build Management

- ▶ Time-based building and testing of shared rule projects
- ▶ Publishing of rule services to Execution Server
- ▶ Publishing of rule libraries to Maven Repositories
- ▶ User and team based permissions for build processes
- ▶ Graphical build statistics like Test Coverage
- ▶ Monitoring of build processes
- ▶ Providing rule libraries to the Visual Rules Modeler

Maintenance

- ▶ Creation and restoring of backups
- ▶ Overview of licenses
- ▶ Migrating Team Server 4 installations to the current version without losing history
- ▶ Installation Wizard
- ▶ Dynamic logging configuration

Web Modeler

- ▶ Creation of Flow Rules and Decision Tables
- ▶ Creation of Rule Models and Rule Packages
- ▶ Project Explorer to browse the contents of a Rule Project
- ▶ Viewing of rules
- ▶ Editing of rules directly in browser
- ▶ Viewing of tests
- ▶ Editing of tests directly in browser

Visual Rules Execution Platform

Execution Server

- ▶ Deployment of rules as web services (WSDL) to be used in SOA, e.g. for decision services in BPM
- ▶ Integration of rules into .NET applications
- ▶ Simple rule deployment directly from Visual Rules Modeler
- ▶ Hot deployment of new and existing rules without any downtime or server restart
- ▶ Multiple versions of the same rules can be provided simultaneously (e.g. with different effective dates or for different organizational units or for champion/challenger scenarios)
- ▶ Specific interfaces for each rule including data types
- ▶ Versioned dependency management between rule libraries and any other Java libraries
- ▶ Metadata support and dynamic rule request routing
- ▶ Generation and retrieval of execution traces (statistics) to visualize in Visual Rules Modeler
- ▶ Support of external databases to store the deployed rule artifacts and statistics (currently MySQL, DB2, Microsoft SQL Server, Oracle and Apache Derby)
- ▶ Dynamic logging configuration

Execution Core

- ▶ Integration of rules as rule service into Java applications
- ▶ Hot deployment of new and existing rules
- ▶ Multiple versions of rule services can be used simultaneously
- ▶ Rule services can be executed using Visual Rules Rule Execution API
- ▶ Versioned dependency management between rule libraries and Java libraries
- ▶ Support of external databases for storing and accessing libraries (currently MySQL, DB2, Microsoft SQL Server, Oracle and Apache Derby)

Visual Rules DatabaseIntegrator

DatabaseIntegrator

- ▶ Direct access to RDBMS from rules
- ▶ Import of data types from relational databases
- ▶ Definition and management of JDBC and JNDI connections
- ▶ Access to data with SQL SELECT action
- ▶ Change of data with SQL INSERT, UPDATE and DELETE actions
- ▶ Transaction control with COMMIT and ROLLBACK actions
- ▶ Call of stored procedures and stored functions with CALL action
- ▶ Creation and deletion of database elements (e.g. tables) with DDL action

Builder

- ▶ Full integration of rules into Maven-based build and deployment processes
- ▶ Maven plugin for generating rule code
- ▶ Maven plugin for validating rule models
- ▶ Maven plugin for executing tests and test suites
- ▶ Maven plugin for packaging rule artifacts (JARs with rule code, including WSDL and rule model files)
- ▶ Maven plugin for deploying these artifacts to Visual Rules Execution Server
- ▶ Ant task VRCheckout to fetch rule projects from a Team Server repository
- ▶ Ant task VRDeploy to automate rule deployment to Visual Rules Execution Server
- ▶ Ant task VRGenerate to automate code generation
- ▶ Ant task VRTest to automate tests
- ▶ Ant task VRDoc to create documentation of rule projects

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