



## Wholesale Credit Rating and Loan Processing Workflow

Risk Frameworks Manager (RFM) is a credit rating and loan workflow solution specially designed to meet the needs of financial institutions that offer loans to business customers. The solution is unique in its ability to combine simplicity of deployment with model sophistication, while facilitating a level of agility that is unmatched among enterprise-grade systems. Leveraging its underlying World Modeler™ engine, RFM's rating models, workflows, and most other application features can be quickly modified in a configuration-controlled, graphical environment without any need for programming. Banks and other lenders who use RFM will always be able to quickly and simply implement the changes they need to stay competitive without being forced to rely on the scarce and costly skills needed to work with vendor-proprietary systems.

## RFM Features

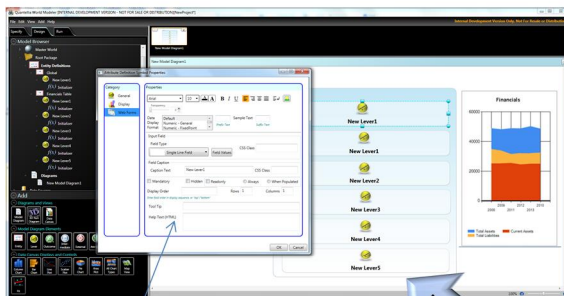
RFM includes:

- A wholesale credit rating model. This can be supplied by you or configured by us to meet your needs. Input variables gathered from the loan application, along with supporting information, are used to compute a credit rating, used by bankers and credit officers to make lending decisions.
- A loan workflow engine that captures loan data, maintains loan status, routes loan applications, manages document attachments, and generates automated communications and notifications.
- A sophisticated, graphical Group Modeler that allows you to keep track of complex and subtle relationships between parties related to a borrower.
- A highly configurable web-based interface that bankers throughout your organization can use to assist in loan processing and credit decisions.
- Automated monitoring, which tracks that rating models perform as expected, by comparing predicted to actual loan default rates.
- Probability of Default (PD) and Loss Given Default (LGD) modules that comply with the Basel accord standards.
- A visual modeling interface for making changes to the rating model, workflows, rules and other application behavior. Changes can be made rapidly by business unit staff, and then published into production as soon as they are approved. This system completely removes the need for custom software / re-coding by IT or others when models change.

In addition, all application functions are available as Web Services, facilitating enterprise integration with other systems such as Spreading\*, collateral management, and treasury.

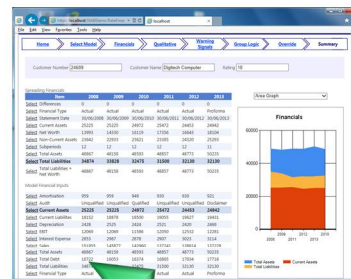
\*RFM can be supplied with an integrated spreading system as an optional add-on.

### Model Development



Property panels capture enterprise application configuration and functions within the model.

### Web Application for Enterprise Users



Application panels built by enterprise server by reading configuration information from model.

### Enterprise Model Repository

**RFM's award-winning architecture integrates model development with line-of-business banking applications. RFM dramatically reduces the time, effort, and cost of making model changes and deploying them into production.**

## RFM Technical Specifications

<b>Architecture:</b>	<p>Microsoft ASP.NET V 4.0 application server with connection to any of the following relational databases:</p> <ul style="list-style-type: none"> <li>- Microsoft SQL Server 2008 or later</li> <li>- Oracle Database 11i or 12g</li> <li>- MySQL 5.7.</li> </ul> <p>Supported browsers are Microsoft Internet Explorer v. 11, Apple Safari 7 or 8, Firefox 37.0.1 or later, or Google Chrome 41.0 or later.</p>
<b>Deployment:</b>	<p>RFM may be deployed as a hosted cloud service, in a private cloud, or using on-premise virtual or physical servers. Deployed components and modes of operation include:</p> <ul style="list-style-type: none"> <li>• Database Server</li> <li>• Application Server (ASP.NET). This serves both <ul style="list-style-type: none"> <li>○ Interactive web application pages</li> <li>○ RESTful Web Services interface</li> </ul> </li> <li>• Web browsers for end-users of interactive applications. Application screens are designed for a PC screen, and normally work on tablets or smart phones. Note that small screens may not provide a usable interface for interacting with the application.</li> </ul>
<b>Data Limits:</b>	<p>No pre-defined limits are placed on the number of records managed by the system. The hardware configuration should be sized in order to adequately support the data volume and transaction rates the system is required to deliver.</p>
<b>User Limits:</b>	<p>Number of users is limited by the number of licenses purchased. Additional users can be added by purchasing the required number of licenses.</p>
<b>Security:</b>	<p>User activity and access to data is controlled by security profiles established by the system administrator. All passwords are encrypted and can be re-set at any time by a system administrator. All system access is logged.</p>
<b>Encryption:</b>	<p>Available, depending on whether customer database supports encryption.</p>
<b>Rating Functions:</b>	<p>Search customer database, create prospective customer, define or update groups and relationships, rule-based model selection, retrieve previous ratings, input financial information for all relevant parties, search and retrieve data from spreading system, automatically upload data from spreadsheets, or retrieve from other data sources, analyze and chart quantitative data, capture qualitative information, perform provisional rating, override provisional rating (with authorization and explanation), submit for re-rating, approve rating, automatically re-rate current customers on event trigger.</p>
<b>Loan Workflow Functions:</b>	<p>Define workflow status values, define allowed workflow status transitions, define routings, define notifications, attach documents, escalate blocked workflow paths.</p>
<b>Modeling Functions:</b>	<p>Create and update model elements, create relationships and dependencies between model elements, bind relationships to data, “sketch” relationships where good data sources are not available, track model changes, visualize model, run validation and stress-testing scenarios, create model documentation, define application presentation, rules, and other behavior of model elements, publish model to production applications.</p>
<b>Monitoring Functions:</b>	<p>Compare actual default frequencies with modeled probabilities, analytics and data visualization, calculate empirical uncertainty ranges, analyze Loss Given Default (LGD) by Loan-to-Value Ratio (LVR).</p>
<b>Audit Functions:</b>	<p>Find all rating events associated with customer, find all events and changes associated with specific system user, find all changes to specific model(s).</p>

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