SAS® Business Rules Manager

Automate and improve decisions across the enterprise

What does SAS® Business Rules Manager do?

SAS Business Rules Manager is an easy-to-use solution for creating, deploying and managing business rules from both IT and business perspectives. It includes a central rule repository, a common platform for rule development and deployment, and workflow automation.

Why is SAS® Business Rules Manager important?

The software keeps business rules consistent, centrally managed and easy to maintain. It also makes it simpler and more efficient to automate rule-driven decisions across the enterprise. By prescribing approved, analytics-based actions – for making reliable decisions about customers, and for straight-through processing and routine business processes – SAS Business Rules Manager eliminates the risk of incremental, ad hoc operational decisions.

For whom is SAS® Business Rules Manager intended?

SAS Business Rules Manager is useful for business analysts, data scientists and the IT staff, as well as department, business and functional systems managers.

Business policies are essential to running an effective organization. They dictate how your business needs to operate and how you want to interact with customers. Without them, your reactions may be sluggish, inconsistent or ineffective. In turn, you could suffer from poor customer satisfaction, financial loss or penalties related to fluctuating markets or regulatory changes.
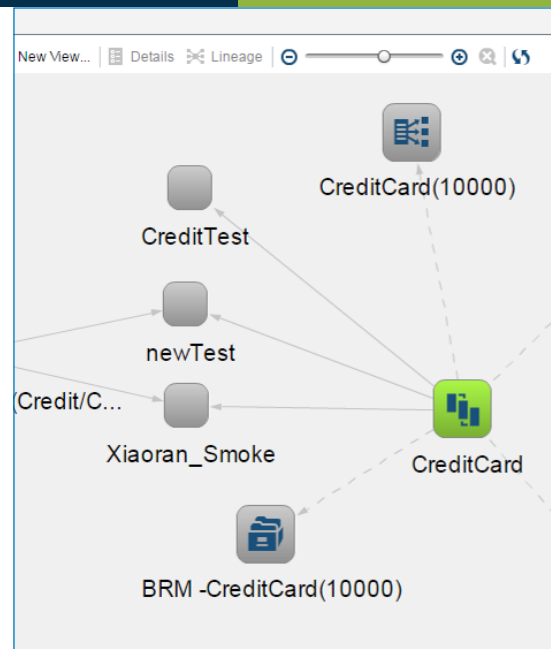
For many organizations, it's not easy to keep track of and proactively manage these policies. That's because business rules tend to be locked up in code that can't be managed, or in manual processes that can't be tracked and measured. Rules are implemented in various ways across the organization, making consistency difficult – if not impossible – to guarantee.

The solution? Treat rules as assets that are carefully managed, governed and incorporated into your business processes. By unlocking rules from varied implementations, you can manage them centrally and have confidence that they'll be used consistently across the organization – significantly

reducing operational risk. You can also write rules once and deploy them to multiple targets without having to rewrite and revalidate the rule logic in each deployment.

Key Benefits

- **Be consistent while reducing dependency on IT**. Do away with complexity through a central business rules repository and common platform that lets people across the organization collaboratively develop and deploy automated, governed rules – no coding required. Across channels, business units and geographies, SAS manages business rules the same way, keeping everyone on the same page.

- **Get more accomplished – faster – and adapt on the fly**. Changes, rule flows and data dependences are depicted graphically. Workflows include reviews, approvals and version control. See workflow or process status along with full rule-flow lineage. Look at what you did in the past and decide how to do it in the future. Test iteratively – make changes and compare results.

- **Trust the data to rule your business**. Use analytical modeling based on your operational data to automatically generate and discover rule definitions and vocabularies. Used in conjunction with SAS Decision Manager, business rules and analytical models combine into fact-based, traceable decision flows that automatically define the best action to take – for front-line staff and applications alike.

Solution Overview

SAS Business Rules Manager is an approach for automating and improving decisions across the enterprise using business rules. It provides a central repository for business rules and a common platform for managing rule development and deployment – with workflow automation throughout.

Analytically derived rules, sound operational decisions

SAS brings science to the traditionally instinct-based process of defining business rules, using analytical methods to derive rules directly from your operational data. Discovered business rules can provide new clarity to decision scenarios that weren't previously known – and can validate investigative notions – because they provide clear

evidence for business rules that are already embedded in your operations.

The software applies formal decision flows directly to applications and operational systems, and automates considerations and assessments of each decision scenario. Each person involved in the process stays focused on his or her area of expertise – business analysts select optimal decision flows,
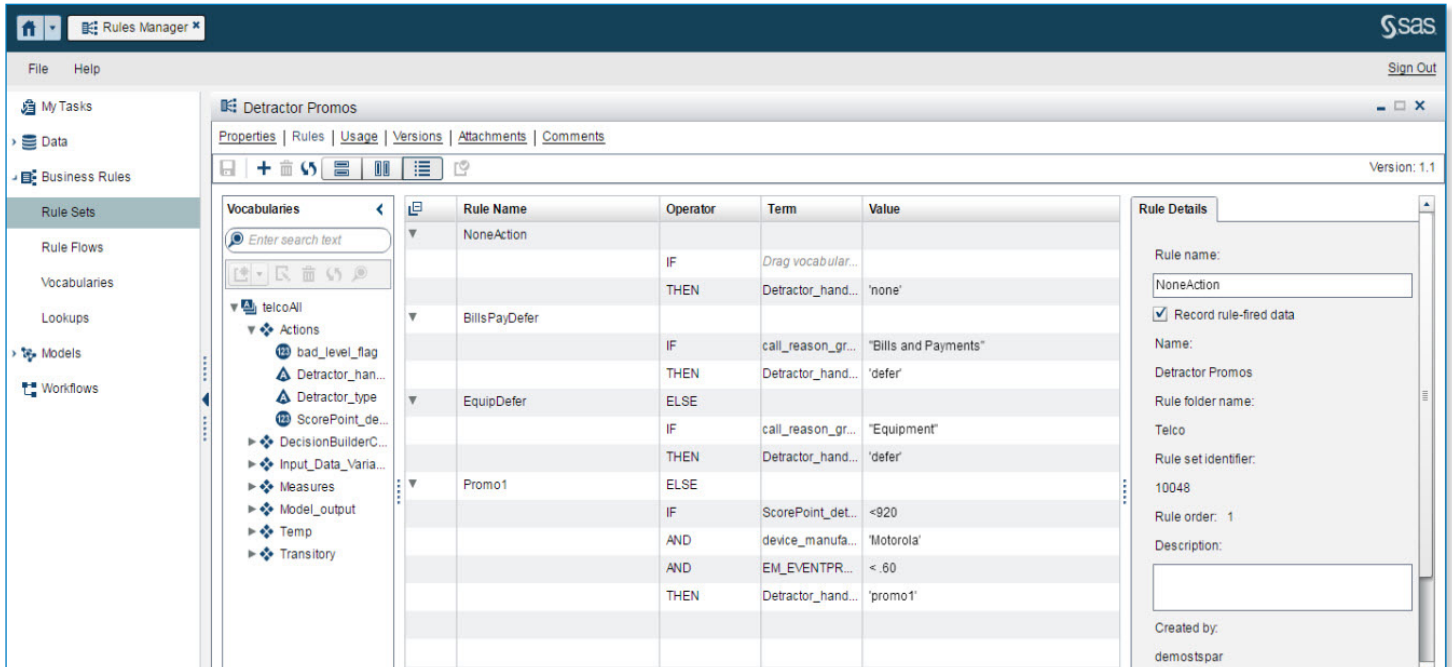

Figure 1: An easy-to-use editor for designing and testing business rules.
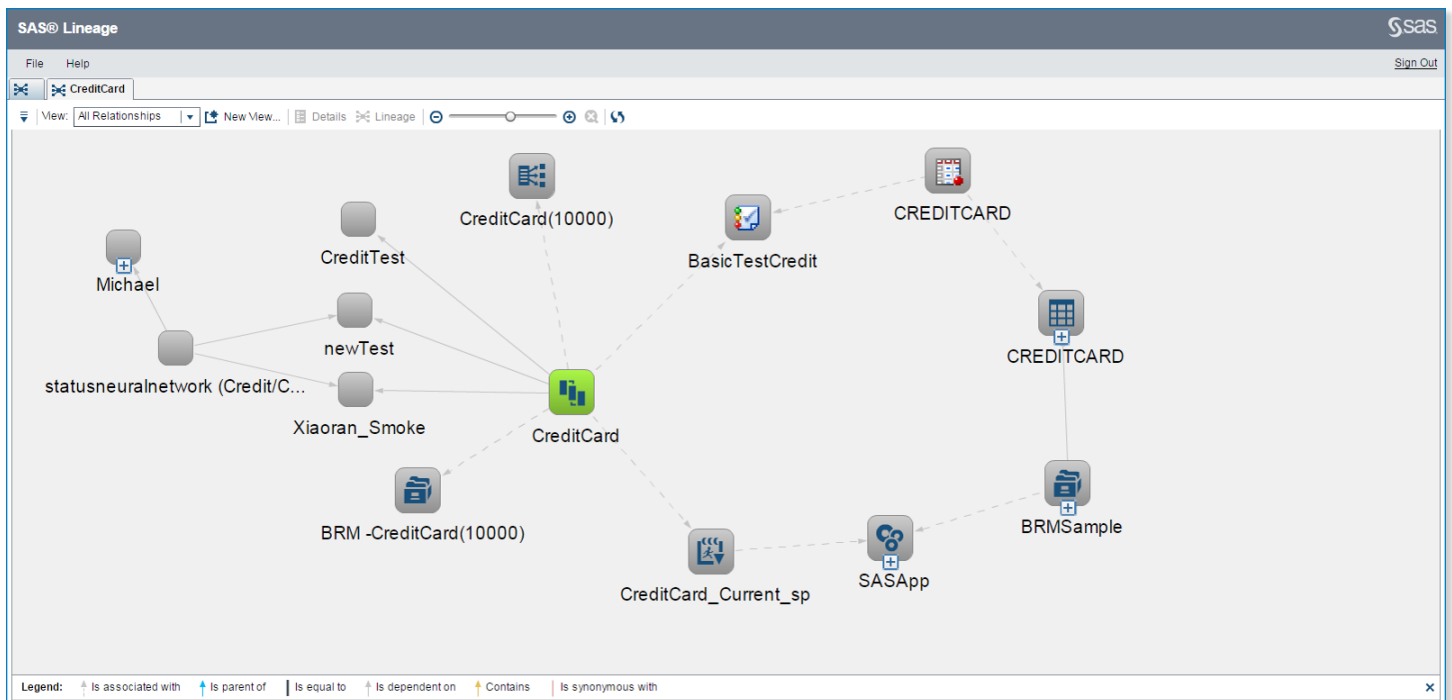

Figure 2: Easily assess upstream and downstream impact analysis using built-in lineage.

IT deploys reusable decision objects in operations, and front-line staff members understand precisely how to respond.

Single interface for decision flows when combined with SAS® Decision Manager

With limited technology options, some organizations are forced to use multiple applications or resort to simplified decision flows to accomplish their goals. When combined with SAS Decision Manager, SAS Business Rules Manager provides a single interface to support a common workflow, version control, and extensive, iterative testing and validation.

Business rules governance

SAS Business Rules Manager applies operational rigor to keep business rules consistent, viewable and easy to adjust. Reviews, approvals, version locking, version history and detailed overrule elements are all included in the workflow.

Multiple deployment options and savings

With SAS, you can deploy rules to batch, in database and as web services, using either SOAP or REST. Business analysts can create decisions once for IT to deploy in multiple environments, supporting decision logic reuse. You can use existing hardware to support automated decisions. And slash development to deployment processing time by making better use of analytical and business expertise. This agility helps you operate more efficiently and positions you to respond faster to changing needs.

Key Features

Business rules governance
- The workflow supports reviews, approvals, version locking, version history and detailed control of rule elements. Rule flows are sent through approval workflows and track workflow tasks.
- Rule set versions are automatically locked when rule flows are published.
- Graphical workflow status, process status and full rule-flow lineage are depicted visually.
- Specific versions of a rule set can be exported to maintain a revision history.

Analytically derived business rules
- You can choose from four alternate analytical methods to discover business rules from your operational data:
  - Decision trees.
  - Market basket analysis.
  - Scorecarding.
  - Recency, frequency and monetary (RFM) analysis.[1]
- A wizard-driven system helps you jump-start the business rule definition process by providing a wizard-driven system to select and deploy your preferred discovery method.
  - A group-by-processing option helps to further delineate business rule discovery within specific operational data segments.

Role-based authorization and access
- With SAS Management Console, administrators have a single point of control to set authorization, access and security levels for individual users.

Multiple deployment options
- Real-time deployment is handled via web services.
- Batch deployment is available.
- In-database deployment works as follows:
  - In-database rule execution via SAS In-Database Code Accelerator for Teradata.
  - In-database analytical model execution (via SAS Scoring Accelerators) is supported for Hadoop (Cloudera and Hortonworks distributions) and SAP HANA, as well as IBM DB2, IBM Netezza, Oracle, Greenplum, Teradata Aster (only supports SAS® Enterprise Miner™ models), Teradata Enterprise Data Warehouse and SAS Scalable Performance Data Server.
  - When integrated with SAS Data Integration Studio, in-database rule and model decision flows can be seamlessly executed in database.
- Stored processes:
  - From a single button in the SAS Business Rules Manager interface, you can create a stored process of rule flows.
  - Stored processes are registered in metadata and are available immediately as a business intelligence web service.
  - Stored processes are available to use in any application, including mobile.

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[1] Based on the RFM analysis produced by SAS® Enterprise Guide®.

Key Features (continued

Sound operational decisions

- A single environment lets you develop, test, track and deploy business rules into business processes.
- Analytically derived business rules provide thorough, fact-based evaluation of existing operational conditions.
- The solution is suitable for both small and big data environments (and mixed).
  - Uses SAS High-Performance Computing and big data processing technologies.
  - Provides flexible deployment options to address varied operational infrastructures.
  - Minimizes big data movement with in-database processing and virtualized views of operational data stores.
- A data-driven approach ensures that the business vocabulary reflects the entities and terms that are meaningful to your business.

Single interface for operational control

- Common workflow support:
  - Embedded workflow supports reviews, approvals, versioning and ownership status, with publishable views of time-stamped activity.
  - Rule scenarios are examined, tested and defined by business analysts. Status is tracked, and activities are monitored and visible.
  - Rule flows are deployed into operational systems by IT personnel, without coding or rewriting business rule objects. Assets remain consistent – and status reports are retained in the solution.
- Common version control and support:
  - Version locking and role authorization let analysts lock certain objects for editing, so others can't check out or modify resources prematurely.
  - Both publishing and stored process creation are managed using workflow to ensure processes are governed and followed consistently.
  - Auditability and change management are explicit with version control support across rule flows. Analysts can select specific rule elements to include for operational data integration jobs, then selectively promote the use of published rule flows.
  - Centralized, detailed authorization provides internal security compliance.
- Extensive, iterative testing and validation:
  - Detailed rule fire analysis available.
  - You can save rule tests and test suites for reuse and audit tracking.
  - Results and rule test details are displayed simultaneously, so it's easy to determine which rules were executed to create a specific result.
  - You can view lineage of rule flow and associated rule sets and data.

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