



Rational software

IBM Rational Transformation Workbench, Version 3.1

Highlights

- ***Assists in restructuring monolithic applications to help reduce complexity and maintenance costs and speed development of SOA services***
- ***Generates consistently current documentation from the code itself***
- ***Provides deep project-level application analysis to complement the enterprise-wide application insight of IBM WebSphere Studio Asset Analyzer software***
- ***Discovers, documents and manages business rules that remain persistently associated with the relevant code***
- ***Speeds architects' and analysts' understanding of applications***
- ***Provides an Eclipse technology-based offering for developers that complements the fuller analysis and application transformation capabilities in the base product***

Balancing development creativity and effective software asset control

Enterprise applications are often developed over the course of years—even decades. During this time, subject matter experts might move on to other roles, taking with them their insight into the application. Documentation might be out of date. And lack of deep application knowledge can inhibit developers' ability to move quickly toward addressing strategic business objectives.

IBM Rational® Transformation Workbench, Version 3.1 software provides architects, project leaders and managers with the right information about enterprise applications—and the capabilities to make the most of that information. A follow-on release to IBM Asset Transformation Workbench, Version 2.1 software, the Rational Transformation Workbench application is designed to help organizations simplify the maintenance of complex enterprise applications and accelerate modernization using the latest Web technologies and service-oriented architecture (SOA).

An SOA offers the potential to reuse proven, trusted business processes embedded within existing enterprise applications in new, more flexible ways. Rational Transformation Workbench can help you move from reuse strategy to reuse reality.

Providing access to a centralized application knowledge base

The foundation of IBM Rational Transformation Workbench is a current, detailed and contextualized knowledge base of software assets—providing the basis for more advanced IT projects that can bring more value to the business. Team members can readily access detailed reports, metrics, documentation and visualizations of your enterprise applications through Rational Transformation Workbench and its browser-based Application Profiler module. Unlike snapshots of a system that are out of date before they are complete, this knowledge base, or repository, is refreshed from the source code, remaining current as an application portfolio changes.

The application repository enables you to perform a detailed inventory of your applications. And Rational Transformation Workbench identifies missing artifacts that were not loaded into the repository, as well as unreferenced items that might represent unused code you no longer need to maintain. Generating these management reports helps you ensure that the foundational knowledge base is complete and that it provides an optimal basis from which to implement more advanced projects. Rational Transformation Workbench can also help reduce information bottlenecks by enabling analysts, developers, managers and other members of the development team to access the information they need simultaneously—some by using the workbench installed on their PCs, others by accessing reports and diagrams through a Web browser.

Demystifying complex enterprise applications

The Application Analyzer module of Rational Transformation Workbench provides metrics, reports, documentation and visualizations that are designed to help application teams and their managers identify, prioritize and execute modernization initiatives. It can perform change-impact analysis,

generate interactive and business-centric diagrams, create system documentation, and browse source code in context-sensitive mode. The new consolidated impact analysis mode in version 3.1 of the software helps a developer or analyst quickly identify how a proposed change will affect the boundaries of the application or subsystem.

The Application Analyzer module can provide information that makes it possible to analyze complex applications with confidence, bring new development team members up to speed quickly, accelerate the execution of maintenance, speed transformation tasks and reduce the risk of change.

Abstraction of business and technical insights

The Application Analyzer module enables abstraction of business and technical insights so you can more readily comprehend highly complex systems, and understand their boundaries and interactions. Now with version 3.1, you can create and organize entities stored in the repository through a “tagging” architecture based on the business function, geography or other user-defined descriptors. These tagged

groups can then be given values to apply to entities and groups of entities. Once marked, these groups enable you to select a diagramming view that focuses attention on a particular tag value of interest.

Rich diagrams for documentation and knowledge transfer

With the Application Analyzer module, you can generate detailed diagrams of your applications. Because of the depth of analysis the module provides, analysts can readily zoom in from high-level scopes to extremely detailed visualizations of their systems. They can select from a wide spectrum of scopes, including screen flows, dependencies, call maps and more. Analysts are able to customize the scope of the diagrams to focus on information of interest, accelerating knowledge transfer. The new ability to abstract diagrams and to add business context greatly enhances the power to communicate the structure and relationships of a business process and the software that automates it.

Deep, synchronized hyperviews

The Application Analyzer module provides an interactive environment in which you can navigate multiple, synchronized views of applications. You have the flexibility to select from numerous views, including source

code, a context parse tree, call maps, and data and control flowcharts. A simple click on an element updates the other views, helping you to quickly understand even the most complex system. A new customizable watch pane provides centralized access to information about a selected software entity.

Flexible reporting options

You're able to generate a broad spectrum of reports that help streamline the transfer of knowledge between team members. Management-level application portfolio reports, diagrams, impact analysis and many other documents can be readily exported in industry standard formats—including HTML. New features allow many reports to be run in batch mode, saving both creation and deployment time.

Powerful search capabilities for locating hidden artifacts

A powerful querying engine quickly locates constructs of interest buried within application code. You can search for inefficient or nonstandard coding structures, or uncover the elements that will be affected by a particular enhancement. The Application Analyzer module includes a library of prebuilt queries that address common tasks, or you can use a wizard to tailor your own searches.

Analysis of program logic

A new tool helps developers and analysts focus on what matters to them in their current business scenarios. With the Logic Analyzer tool, they can create a logical slice of a program. The code is then marked within the original program in Source View and Interactive Analysis. For example, an analyst or developer may want to discover how institutional claims flow through a claims processing system. This flow can be isolated from other kinds of claims, enabling more complete and rapid understanding of the steps involved.

Boundary identification to define project scope

The Application Analyzer module provides an interactive analysis environment in which to uncover and catalog applications' interface points. By resolving the connections between an application and other systems, you can gain additional insight into the size of an application modernization or maintenance initiative.

Glossary linking business and technical terminology

Extensive usability and capability improvements have been made to the repository glossary. It is now a central component that bridges business and technical terminology. This bridge allows analysts to map business context to technical terms, helping to

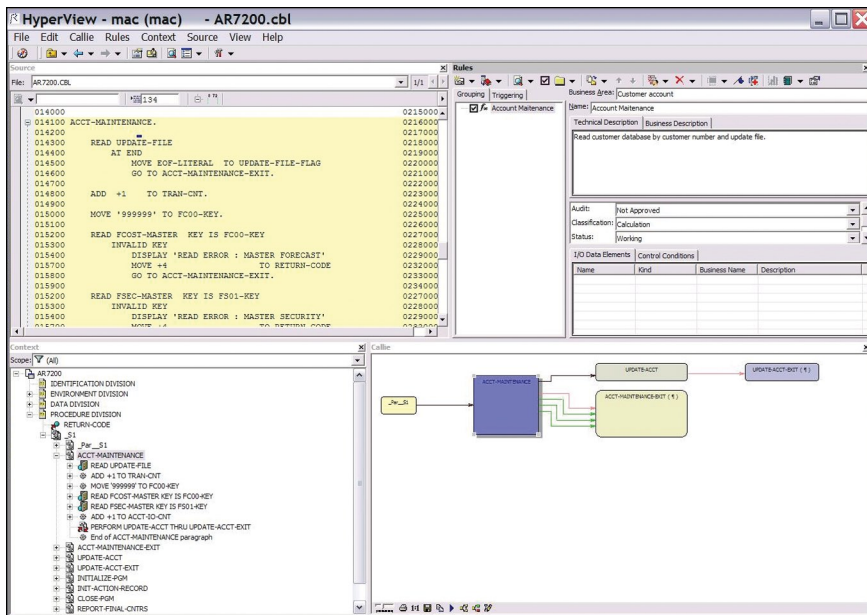
create accurate functional specifications. It also decreases training times for people who are not subject matter experts. And having more intuitive documentation can be an important advantage in compliance activities.

Strengthening management control over the application portfolio

Rational Transformation Workbench software is designed to improve management's understanding of enterprise application portfolios. It can help increase management effectiveness in creating a more efficient development group.

Once applications have been verified through the application knowledge base, managers can use the Application Analyzer module to quickly generate metrics that describe the complexity of programs in the portfolio. The module includes many industry standard metrics—such as cyclo-matic complexity, function points and lines of code—and allows customization to meet specific business needs.

These metrics help you determine where costly complexities might lie within your portfolio, giving you insight into how much effort may be required to transform applications or decrease maintenance costs. Using this capability, your managers can better scope their projects and prepare roadmaps for maintaining and modernizing applications.



The Business Rules extension can help speed the identification of valuable business rules.

Effectively managing business rules for more efficient processes

In all large enterprises, the business processes that direct and channel organizational behavior can be expressed as business rules. Effective management of these rules can increase the flexibility and responsiveness of your organization by aligning operational behavior with the requirements and strategies of management for competitive differentiation in the marketplace. Well-articulated and well-managed

rules can also improve your application development team's efficiency by enabling business and system analysts to better target and describe requirements and change requests.

Rational Transformation Workbench, Version 3.1 offers an optional Business Rules extension that helps reduce the amount of time developers spend searching through source code to find and identify business rules. This

interactive environment identifies candidate rules using sophisticated search algorithms. A list of rules for the targeted application is quickly generated, allowing analysts to view each rule and verify that it should be included. Developers and analysts can also use the Business Rules extension, which can be ordered separately from Rational Transformation Workbench, to conduct manual searches by guiding the process and providing tools to simplify each step.

Once rules are located, they can be documented and organized, allowing future users to quickly understand how rules are applied. Because the rules are tagged, analysts can rapidly locate and modify them to respond to changes in business processes. And the rules remain relevant despite changes to the code. The Business Rules extension stores rules documentation in a centralized XML-based repository, ensuring that people and other technologies can readily reuse information extracted for modernization initiatives.

Rational Transformation Workbench also provides a robust set of tools for automatically detecting and documenting business rules. These tools enable you to:

- *Employ data-flow impact analysis when defining business rules.*
- *Create custom attributes suited to your particular needs.*
- *Match input and output data elements with the business names that were assigned to them in the application data dictionary.*
- *Specify that a rule will activate a set of other rules.*

Version 3.1 includes enhancements to the business-rule discovery, management and interactive visualizations to help streamline the process of isolating logic that can be decoupled and reused in an SOA. These enhancements are designed to improve the overall user experience, making it easier to group business logic in ways that provide meaningful levels of abstraction and that document

difficult-to-decipher code execution paths in a more straightforward and productive way.

Improving application efficiency through componentization

Many mainframe applications are monolithic in nature—intermingling user interfaces, business logic and data access logic. This intermingling makes it difficult for development teams to distinguish and modify business processes within an application. To save time, developers often copy code whenever they need to replicate a function.

Organizations that have used Rational Transformation Workbench have found that up to 20 percent of all application code may be functionally dead or obsolete—code that is never executed but continues to be analyzed and maintained by the team. This unused code can lead to performance degradation and may require significant extra time and effort for maintenance and enhancement activities.

Less maintenance

You can avoid this waste of resources by using the optional Application Architect extension to automatically locate sections of dead code and remove them with minimal human intervention. You no longer have to maintain multiple instances of identical code or manage multiple elements for a given change request.

Fast development of high-quality applications

The Application Architect extension can help reduce the complexity of mainframe applications by enabling you to componentize application code into fully functional segments. These newly extracted programs run as distinct pieces of business logic, allowing analysts to more easily manage business rules and developers to quickly locate elements that require changes. Project teams can better understand how potential changes could affect an application, and they can reuse some code elements throughout an

application to run the same business processes—compressing development cycles for new and enhanced applications. And, by componentizing enterprise code, developers are also able to boost the performance of frequently used programs.

Accelerated application modernization

The componentization of logic can result in a structured architecture that facilitates modernization. These components can be used for restructuring projects, for inclusion in a service-oriented application or for renovating many existing applications.

Facilitating SOA initiatives with application componentization

An SOA provides a framework that can help many companies become more flexible. Using Web services in an SOA, your organization can expose selected mainframe-based business processes for use by other applications through Internet protocols. As a result, you can more effectively integrate your internal applications or selectively open your business processes to your whole value chain.

Rational Transformation Workbench can help accelerate the move to Web services through its business-rules management and componentization functions. Business analysts can identify candidate processes within code using the Business Rules extension. Using the Application Architect extension, developers can then extract the logic into a self-contained component that provides the business-level service appropriate in a Web service. From there, tools such as IBM Rational Developer for IBM System z™ software can be used to rapidly create Web Services Description Language (WSDL) and other Web services.

With the 3.1 version of Rational Transformation Workbench, you can now perform multiple domain componentizations in batch mode, helping to reduce the time and effort required when similar actions need to be taken on a large number of source programs.

Assess applications for reuse in your SOA

The IBM Reuse Analyzer for Rational Transformation Workbench tool can help you assess an application's suitability to be reused as part of your SOA. The technology preview capability enables you to:

- *Categorize IBM CICS® and IBM IMS™ COBOL programs by the type of work performed (screen, business logic, data access or hybrid, for example).*
- *Identify potential architectural traps that would require remediation before making a particular program or program-call hierarchy available as a Web service.*
- *Create WSDL corresponding to the selected data elements in your program that you want to make available in a Web service.*

Gain rapid insight into the nature of identified applications

IBM Rational Transformation Workbench Analyzer for Eclipse software adds a Rational Transformation Workbench perspective to an installation of IBM Rational Developer for System z software. Developers are able to quickly become familiar with the structure and flow of applications using integrated and synchronized Eclipse views.

The wide variety of interactive views provides reports on application artifact interrelationships, a contextualized view of how elements fit into the application as a whole, and flowcharts and call maps that illustrate the behavior of the application. The impact analysis view shows which elements could be affected by a modification to the code, helping to reduce the risk of disrupting critical applications as a result of incomplete changes.

In addition, Rational Transformation Workbench Analyzer for Eclipse delivers a flexible, customizable semantic querying engine, including a library of prebuilt queries, so developers can rapidly locate and understand numerous common items of interest, such as non-standard code or dead code. Support for the most common mainframe asset types is provided, including COBOL, PL/I, JCL, IBM DB2® data definition language (DDL) and EXEC commands for CICS, IMS and DB2 applications.

Gaining cross-application insight with WebSphere Studio Asset Analyzer

IBM WebSphere® Studio Asset Analyzer software provides an enterprise-wide repository of application insight. Seamless integration of these applications with Rational Transformation Workbench means you can perform high-level, cross-application analyses in WebSphere Studio Asset Analyzer, and then easily pass this application insight through a software bridge for use in Rational Transformation Workbench. Project teams can tap into the WebSphere

Studio Asset Analyzer repository to find all application artifacts related to a particular application. Or they can perform an impact analysis to determine what other applications would be affected by a change, such as modifying a database table.

Easing application modernization burdens

Rational Transformation Workbench software helps you improve productivity, accelerate time to market, reduce potential risks and cut costs associated with enterprise application transformation initiatives. Your control of your projects is enhanced through reports, metrics and effort estimators. You can keep your team's application knowledge up to date as your applications and business processes evolve. And by combining the robust capabilities of Rational Transformation Workbench with separately available WebSphere Studio Asset Analyzer, you can rapidly generate a broad and deep understanding of your enterprise applications. More important, you can use that information to modernize your application portfolio and help your organization gain a competitive advantage.



For more information

To learn more about IBM Rational Transformation Workbench, Version 3.1 software, contact your IBM representative or IBM Business Partner, or visit:

ibm.com/software/awdtools/rtw

To see the hardware and software requirements for Rational Transformation Workbench, Version 3.1 software, visit:

ibm.com/software/awdtools/rtw/sysreq

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