

What's New in Rational Products

Release Date November 2000
Book Version 2001.03.00
Part Number 800-023879-000

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Part Number: 800-023879-000

Revision Number: 2001.03.00

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PATENT

U.S. Patent Nos. 5,193,180 and 5,335,344 and 5,535,329 and 5,835,701. Additional patents pending.

Purify is licensed under Sun Microsystems, Inc., U.S. Patent No. 5,404,499.

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What's New in the Rational Suite

Technology Initiatives and New Features

Unified Change Management now in Rational Suite

Unified Change Management is a high-level Rational product initiative that supports all Rational solutions. Unified Change Management, now available in every Rational Suite, delivers integrated change management capabilities that simplify the process of change for Rational customers. Unified Change Management capabilities support the entire development lifecycle, including code, models, testing and requirement assets. Baselining of tests and requirements assets is a new feature of Unified Change Management.

Rational ClearCase LT

Rational ClearCase LT is a new member of the Rational ClearCase product family, providing an entry-level software configuration management solution designed for smaller workgroups. Easy to adopt, Rational ClearCase LT supports Unified Change Management and is included in the Rational Suite Team Unifying Platform. Users can easily upgrade to the enterprise-level Rational ClearCase without changing processes, tools or the way they work.

Quality by Design

Quality by Design is a high-level Rational product initiative that supports all Rational solutions. Through Quality by Design, Rational helps its customers with early detection and repair of software problems. Enhancements in Rational Suite v. 2001 that help build in quality earlier in the development cycle are:

- Rational QualityArchitect is the first product to automate component-based testing. It is included in Rational Suite Enterprise and Rational Suite DevelopmentStudio to speed and automate testing of application components.
- Rational TestManager is now part of the Rational Suite Team Unifying Platform featured in every Rational Suite. Rational TestManager, also a stand-alone product, improves software quality through easy access to test scripts, test results and other testing assets. In addition to providing centralized management of testing assets and activities, Rational TestManager allows any team member to run test scripts. (Note: Test scripts can only be recorded through Rational Suite TestStudio.)

- Rational Purify for Windows now supports memory profiling of Java applications, which enables development teams to dramatically improve memory consumption and application performance.

e-development Accelerators

e-development Accelerators is a high-level product initiative that allows development teams to jumpstart their application development process through the following three major areas of focus:

- Reuse of standards, based on UML and The Rational Unified Process
- Reusable frameworks included in Rational Suite
 - Rational Rose database pattern support for Windows DNA enhancements
 - Rational Rose frameworks for J2EE version 1.2 and J2SE versions 1.2 and 1.3
 - Connexis distributed application framework for Rational Rose RealTime
- Advanced automation to support reuse at financially significant levels

Rational Suite Extensibility

Rational Suite Extensibility is a common API for Rational Suite that allows Rational Suite to be integrated into an extended development solution that includes customer homegrown tools, third party partner tools and new Rational products.

Rational Unified Process variants are now available for both the IBM e-business environment and the Microsoft Web Solution Platform. The Microsoft Web Solution Platform variant is a new RUP variant. The IBM variant is an update to the variant announced in Rational Suite 2000. These variants align the Rational Unified Process more closely with these vendors' development technologies.

Rational Suite Team Unifying Platform

Rational Suite Team Unifying Platform is a new edition of Rational Suite for team members who need to share artifacts, but due to their roles, do not require the productivity tools found in other Rational Suite editions. The Rational Suite Team Unifying Platform includes Rational ClearCase LT, Rational ClearQuest, Rational Unified Process, Rational RequisitePro, Rational SoDa, and Rational TestManager.

Rational Suite ContentStudio—Unifying Code and Content Management

Rational Suite ContentStudio, announced 10/00, is the first product to unify code and content management for e-business and will be available by April 1, 2001. *This product is not part of the Rational Suite Version 2001 synchronized release.*

Enhanced Internationalization Support

Rational Suite v.2001 now supports Korean and Hebrew languages. Other supported languages include German, French, Italian, Swedish, Japanese, Simplified Chinese and Traditional Chinese.

What's New in Rational Suite AnalystStudio

New Features at a Glance

- Rational ClearCase LT included with Rational Suite AnalystStudio
- Rational TestManager included with Rational Suite AnalystStudio
- Enhancements to Rational Rose Professional Data Modeler Edition

New Feature Descriptions and Benefits

Rational ClearCase LT included with Rational Suite AnalystStudio

Rational ClearCase LT is a software configuration management solution for project workgroups. ClearCase LT offers Unified Change Management (UCM), Rational's "best practices" based, out-of-the-box process enabling project teams to manage change at the activity level and control workflow.

Benefit

Now your whole team can be involved with change control, and all of the project artifacts can be managed in one tool.

Rational TestManager included with Rational Suite AnalystStudio

Rational TestManager is a platform for the management and control of all testing activities throughout the entire software development lifecycle. TestManager helps assess execution of the test plan through detailed and informative reports.

Benefit

Rational TestManager allows you to build Quality from the beginning, saving you time and money by identifying problems early in the project lifecycle.

Enhancements to Rational Rose Professional Data Modeler Edition

Rational Rose Professional Data Modeler Edition allows data modelers and application modelers to work together to solve their business problems using one notation and one tool. New features include domain support, schema migration, newly supported databases, and more!

Benefit

By streamlining communication between data modelers and application modelers, time that was spent trying to get the data and application modelers on the same page can now be spent on solving the business problems.

What's New in Rational Suite DevelopmentStudio

New Feature Summary

Rational Suite™ DevelopmentStudio™ (RSDS) brings together Rational's award-winning development and diagnostic tools into one very powerful package. Rational Suite DevelopmentStudio integrates tools specifically tailored for individual project managers, software architects, and developers with software designed to unite both individuals and teams into a collaborative force. This unique combination provides the resources your organization needs to manage the complexity of software development, drive e-development, and deliver higher quality software in Internet time.

New Features at a Glance

The features listed herein are only those features that pertain to the RSDS product integrations or features that, by their nature, help unify the development team. There are numerous other new point product features within this product release. For details on these point product features, please see the: "What's New" documents for the specific point products of interest.

Studio Enhancements

Enhanced Unified Change Management (UCM)

- Introducing: Rational ClearCase LT
- Enhanced UCM

Quality by Design

- Rational QualityArchitect
- Rational TestManager

e-Development Accelerators

- Speed
- Quality

Open Platform

- Rational Suite Extensibility
- Rational Unified Process variants

Product Enhancements

Rational Rose

- Language enhancements
- Improved Java Support
- Improved Data Modeling Support
- Model Integrator enhancements
- Rational ClearCase Add-in enhancements
- Improved UCM support

New Feature Descriptions and Benefits

Enhanced Unified Change Management (UCM)

Introducing: ClearCase LT

Included in Rational Suite DevelopmentStudio, ClearCase LT is ideal for the project workgroup level and for teams that don't require distributed servers, database replication or transparent file access. It is an easier-to-use and deploy version of ClearCase that provides all of the benefits of activity-based configuration management.

Provides project workgroups with:

- Unified Change Management
- Snapshot views
- Parallel development
- Single server-based configuration management
- Easy to adopt and administer
- Easy upgrade path

Enhanced UCM

Customers can now effectively apply UCM across the software development lifecycle – using Rational ClearQuest (in RSDS) to manage activities and Rational ClearCase LT to manage artifacts. These products have always been effective at managing software artifacts – things like code and Rose models. The inclusion of Rational ClearCase LT combined with the new Rational Suite UCM capabilities to manage requirements and test artifacts means software teams can effectively use Rational's process for managing change across the lifecycle.

Benefit

Customers using RSDS can easily take advantage of UCM facilities across the entire project lifecycle - from elicitation of user needs, to requirements management, to architectural design and system modeling, to coding and testing.

Quality by Design

Quality by Design is all about earlier detection and repair of software problems. Traditionally, you didn't discover most of your architectural and implementation problems until late in the project, when you had completed system integration. When you can find and resolve problems earlier in the lifecycle, you increase your return on investment--delivering high quality software more quickly. We do this through an iterative approach to development that attends to testing and automation to build in quality throughout the iterative development process, across the entire lifecycle.

- Reduce risk and cost
- Improve testing automation across the lifecycle
- Gain higher confidence that quality is achieved
- Focus entire team on quality goals

Rational QualityArchitect

Rational QualityArchitect is an extension to the visual modeling capability of Rational Rose. It enables Rational Suite DevelopmentStudio users to perform model-based component testing by generating code automatically from within the Rose model.

- For the first time you can automatically build stubs and drivers to use in testing components before the application is complete

Rational TestManager

Rational TestManager is an open and extensible environment for the management of all testing activities. It is a centralized control platform to plan, design, implement, and execute tests and then analyze their validated results. "Open and extensible" means

that now TestManager can also connect to and control proprietary testing platforms external to the scope of today's Rational testing tools. It also helps manage testing assets and provides traceability of the various activities performed during iterative development. TestManager will give the entire team a more complete picture of coverage in all senses – coverage by requirement, configuration, model, tester, etc.

- All team members can execute (play back) tests
- Define customized test types
- Organize and manage assets by tests, not tools
- Open APIs for third-party integration

Benefit

- Reduce risk and cost
- Improve testing automation across the lifecycle
- Gain higher confidence that quality is achieved
- Focus entire team on quality goals

e-Development Accelerators

Increase speed and quality throughout the development lifecycle through reusable software assets. The focus is on reuse at every phase of development iteration, Rational Suite DevelopmentStudio helps speeds the process without sacrificing quality.

Increase Speed

- Shorten development lead times
 - Inception – use pre fabricated solutions
 - Elaboration – generate architecture that is executable
 - Construction – automate repetitive coding tasks
 - Transition – automate change cycle
- Reuse at financially-significant levels

Increase Quality

- Automate quality from the beginning

- Dramatically reduce reliance on hand-written code

Benefit

The e-development Accelerators initiative benefits the customer by accelerating development, improving quality, and improving practitioner communication. It focuses on three major areas: reuse standards, based on UML and RUP, reusable frameworks, and advanced automation to support reuse at financially significant levels. Unlike traditional reusable assets, the standards-based frameworks also include requirements, designs and tests. Rational doesn't intend to build the frameworks (in the RAS sense), but encourage the formation of a reuse market based on Rational tools, standards, and process.

- Standards-based
- Financially-significant reuse
- Reduce reliance on hand-crafted artifacts
- Improve communication

Open Platform

Rational Suite Extensibility

Common extensibility makes it possible for Rational, our partners, and our customers to build value-added development solutions into and on top of Rational Suite DevelopmentStudio. Rational Suite Extensibility allows Rational's own products to access information created by different components of the Suite in a consistent manner. This allows us to develop new products that totally rely on accessing and creating development artifacts within existing information stores. To the end user, we present a consistent information model, even though some artifacts may be stored in Database, others in text files, or even versioned in Rational ClearCase.

- Ease of integration
 - Common API for Rational Suite DevelopmentStudio
 - New specialized API for Rational TestManager
- Makes Rational Suite extensible
 - Complementary partner tools
 - Customer extensions

Benefit

The primary benefit of Rational Suite Extensibility is reduced development costs and faster time-to-market with a Rational Suite development solution. Rational Suite Extensibility simplifies application business logic while making it easier for partners to integrate their solutions with Rational Suite. Customers also benefit from a common method of integrating their COM-based applications.

Rational Unified Process

Support for Customization and Extensibility to:

- Support partners developing additional content for RUP through the Rational Unified Partner Program. This additional content will provide our customers with accelerated access to content for a number of technologies and domains.
- Support the need for customers to customize and extend RUP to fit their specific needs.

The enhancements include:

- Rational Process Workbench, a tool enabling visual customization of the Rational Unified Process, supports a new way to manage process variants using process components; improved performance; and improved model and structure
- Additional guidelines and tool mentors describing how to do customizations.

Support for Microsoft and IBM technologies:

- A new variant provides specific guidelines, templates and examples for project teams developing applications for the Microsoft Web Solution Platform. "RUP with content for the Microsoft Web Solution Platform" has been jointly developed with Microsoft and Applied Information Sciences (AIS).
- The variant "RUP with IBM Content for e-business" has been extended with a roadmap for developing large e-business applications using Rational Suite and IBM WebSphere Enterprise. RUP tool mentors and technical guidelines will also ship with IBM WebSphere Enterprise and is today available for download.

e-business Improvements

- A new roadmap has been added addressing the specific needs of small projects. The roadmap specifically targets e-business projects with 2-10 people, and 2-5 month duration.

- Additional guidelines on technology selection
- Updated examples for e-business applications

Rational Rose Enterprise

Language Enhancements

Rational Rose Enterprise includes improved language support in a number of areas. A new C++ language parser is used for both ANSI C++ and Visual C++.

- ANSI C++ support – improved over Classic C++
 - Full ANSI C++ language support
 - Simplified and comprehensive C++ RTE
 - Menus similar to other language add-in menus
- Visual C++
 - Better RTE integrity; faster RTE performance
 - RTE requires less memory
 - Specify location of generated .cpp and .h files
 - Added language constructs: typedefs, enums, nested types
- Visual Basic
 - Windows DNA patterns for data modeling

Improved Java Support

- With the new Multi-file Modeless Editor you can have both Rose and the editor up at the same time, make changes in the model and see the code in the editor update automatically, make changes in the code and see the model update automatically. The enhanced JavaDoc support makes the task of documenting your Java code less tedious in nature.
- New J2EE v. 1.2 Support. The EJB modeling support generates beans that are ready to deploy with your favorite v1.1 compliant application server. The Java Servlet support is currently unmatched in the industry.
- New integrated support for VisualAge for Java v.3.5.

- New frameworks now provided to work with Sun's popular Java 2 platforms. Reverse engineering of the JDK for these new platforms is now much faster than before.

Improved Data Modeling Support

Significant changes have been made in the data modeling. With these changes, combined with the significant benefit of having all models in one notation, tool and language - data modelers, analysts and developers can now efficiently work together, capturing and sharing business requirements, and tracking them as their project evolves throughout the development process.

- Stored Procedures
- Domains
 - User Defined Datatypes
- Compare and Synchronization
- Schema Migration
- Alternate Key Migration
- Definition of Candidate Keys in the object model
- Sybase Database support
- DB2 Version 7 support
- Various bug fixes and minor enhancements
 - Display precision and scale on a diagram
 - Show columns in physical order on a diagram and browser
 - Additional Trigger UI
 - Performance enhancements
 - Many object-relational transformation bugs

Model Integrator enhancements - finer granularity merge

Many merges can now be accomplished automatically, where before they would require manual intervention. For example, consider changes by two team members to different properties of the same class. Previously, Model Integrator would require manual intervention at merge time. In v2001, Model Integrator is able to merge these changes automatically.

Rational ClearCase Add-in enhancements

The Rose menu to select ClearCase commands has been greatly improved. In the past, you had all ClearCase options available: Add to Version Control, Check In, Checkout, and Undo Checkout, despite the ClearCase status of the model, package, etc. In the v2001 version of Rose, Rose keeps track of the ClearCase status of the object you are working with and only makes the appropriate ClearCase commands available to you. For example, if you want to check in a package that is not yet under ClearCase control, the only option that makes sense is “Add to Version Control” so that option is available, but the Check In, Checkout, and Undo Checkout options are grayed out in the Rose menu.

Improved UCM support

The Rose ClearCase add-in now uses standard UCM dialogs for user interaction. Also, in v2001 the user can specify the minimum change in coordinates (pixels) that Model Integrator should consider to be a change in the model.

Rational Purify

Rational Purify now does memory profiling for Java applications, helping Java programmers determine:

- How much memory the program consumes
- Where in the code too much memory is being consumed
- The areas where a forced garbage collection would help performance

It is important to recognize that, although you cannot have memory “leaks” in a Java application, its memory usage can grow over time. As organizations deploy web-based Java applications that must be available 24x7, applications whose memory consumption grows over time can eventually lead to application failure. Thus, Rational Purify’s new Java facilities are an important tool in understanding an application’s memory profile and identifying memory consumption.

Note that the new Purify support for Java applications is available on Windows only. It requires a JVM (Java Virtual Machine) v1.2.2 or newer.

Rational Quantify and Rational PureCoverage

Line-level reporting for Java (on Windows) provides more detailed information than function-level analysis

Rational Quantify and Rational PureCoverage now include line-level reporting for Java through a byte-code insertion feature. Thus, you gain an understanding of your application's behavior down to the individual code-line level:

- Memory profiling for Java applications (on Windows)
- Helps Java programmers determine:
 - How much memory does the program consume?
 - What part(s) of the program is/are consuming too much memory?
 - Where would a forced garbage collection help performance?

As with Object Code Insertion, Byte Code Insertion means that you can run Purify, Quantify and PureCoverage on Java applications for which you do not have source code.

What's New in Rational Suite DevelopmentStudio RealTime Edition

New Feature Summary

Rational Suite DevelopmentStudio – RealTime Edition (RSDS-RT) brings together Rational's award-winning development and diagnostic tools into one very powerful package. The Real-Time Suite integrates tools specifically tailored for individual project managers, software architects, and developers with software designed to unite both individuals and teams into a collaborative force. This unique combination provides the resources your organization needs to manage the complexity of real-time embedded software development, drive e-development, and deliver higher quality software in Internet time.

New Features at a Glance

The features listed herein are only those features that pertain to the RSDS-RT product integrations or features that, by their nature, help unify the development team. There are numerous other new point product features within this product release. Rational Rose RealTime, in particular, has undergone a major release update. Rational Connexis has been added to the Real-time Suite for the first time. For details on Rose RealTime or any other of these point products, please see the "What's New" documents for the specific point product of interest.

- Real-Time Embedded System Modeling (Rational Rose RealTime)
 - Target Deployment Package (TDP) Product
 - Support for C and C++ in One Environment
 - Scalability Improvements
 - Better Configuration Management Support
 - Selective Control of Model Elements
 - Build Libraries
 - Web Publisher Add-in
 - Model Integrator Add-in
 - C++ Analyzer Add-in

- Support for Building Distributed Applications (Rational Connexis Standard Edition)
- Enhanced Integrated Use-Case Management (Rational RequisitePro, Rose RealTime)
- Improved Enhancement / Defect Management (Rational RequisitePro - ClearQuest)
- Simultaneous Data Collection (Purify, PureCoverage)
- How To Implement RUP In Different Situations

New Feature Descriptions and Benefits

Real-Time Embedded System Modeling (Rational Rose RealTime)

This current release represents the first major upgrade since the product was released in April 1999. Rose RealTime has raised the bar even higher for real-time embedded visual modeling tools. Most of the enhancements to Rational Rose RealTime fall into these main areas, GUI, team development, and scalability.

- GUI - Rational Rose RealTime has an improved GUI, making it easier to manage all of the output information generated during model build.
- Team Development - Rational is the leader in team-oriented development. To sustain this claim, Rational Rose RealTime has improved its configuration management support, making sure that large models can be managed and worked on easily and efficiently.
- Scalability - Real-time projects can be large and complex. Rational Rose RealTime is optimized to deal with all of these challenging issues. Rational Rose RealTime's build process has been significantly improved with its integration with ClearMake. Compile and link times are much better for large models compared to the previous release.

Target Deployment Package (TDP) Product

The Target Deployment Package adds the capability to support the generation and deployment of applications on an embedded target. This support for embedded environments is in addition to the four host environments in the base product.

Benefit

The distinction between deploying the generated applications on a host versus an embedded target is clear. In addition, all supported target ports are available to customers who purchase the TDP. With the TDP, you can test on the host as well as embedded target platforms.

Support for C and C++ in One Environment

Rational Rose RealTime can generate applications using either C or C++, from one environment.

Benefit

One installation makes available either C or C++ code generation. Within any Rational Rose RealTime model the code generation language default is selected to be either C or C++. However, this can be selected at the class level as well.

Scalability Improvements

- Better Configuration Management Support

Rational Rose RealTime's Configuration Management (CM) integration is now more complete. The most significant enhancements come by way of including support for the ClearCase ClearMake tool. ClearMake provides three important capabilities to Rational Rose RealTime's build process:

- Trace-back - An executable can be traced back to its versioned sources
- Wink-in – This allows developers to automatically share and re-use other developers' work
- Tracking build dependencies – Rational Rose RealTime tracks dependencies for non-ClearMake artifacts

In addition, there are a number of other enhancements due to an improved integration with ClearCase, including:

- Rational Rose RealTime uses checksums to minimize the reloading of controlled units upon checkout
- Models are validated incrementally
- Diagrams/dialogs kept open after file reload
- Target Observability settings stored locally
- Sharable workspace file
- New "Submit all Changes" operation

Benefit

Developers do not need to worry about when they shouldn't be re-using someone's work, enabling team collaboration to proceed without intrusions or

hassles. Builds are much faster due to fewer and smaller file references. The overall build process is enhanced; optimized for working on large models—less disk space required and build proceeds faster.

- **Selective Control of Model Elements**

The controlled units facility in Rational Rose RealTime has been enhanced to allow more selective control over which model elements are partitioned into separate files and eventually put under source control.

Benefit

More control over the way models are used in a collaborative effort.

Build Libraries

Rational Rose RealTime now supports the capability to divide systems into a number of independent build components. Statically linked libraries can be created from model components that contain possible subsystems or any other reusable piece of software. In another related effort or future project these pre-built libraries can be used as necessary.

In addition to the existing capability to build executable components, Rational Rose RealTime enhancements include:

- **Building library components**

Rational Rose RealTime can designate that during the build process a component generates code but not necessarily for the purpose of creating an executable. The object code that results, is instead archived into a library for use as an external library component.

- **Use of external library components**

Pre-tested and pre-built software components, such as described in the previous paragraph, can be archived into a library and represented in Rational Rose RealTime. These libraries are mapped to components, which represent classes, protocols, implementation patterns, or fully self contained subsystems, which are represented in the model in terms of UML notation but do not result in any code generation. During the build process, actual implementation for the library related modeling elements are resolved during the link process, by referencing the components associated library.

Benefit

True software reuse can be achieved through pre-built components. Overall testing can be reduced because mature pre-built components, which may have already been validated, are employed. In addition, by being able to define

components, which represent pre-built libraries, it is then possible to add more complete modeling of the system, as now even external library implementations are represented in UML.

Web Publisher Add-in

Rational Rose RealTime supports the Web Publisher add-in. The Web Publisher can represent the entire model in HTML. Using a web browser, it is possible to view the complete model, including diagrams and specifications of all model elements.

Benefit

Web Publisher allows anyone with a web browser to look at a snapshot of the model. Once the HTML representation of the model is published on an Intranet, all of the team members and project stakeholders can view the model without having to have Rational Rose RealTime installed.

Model Integrator Add-in

Comparing and merging multiple version branches is now possible. Model Integrator is a new addition to Rational Rose RealTime and provides better diff and merge support. It also serves as the Rose Type Manager for ClearCase. Parallel development is made possible by creating versioned branches of the project model.

Benefit

Rational Rose RealTime supports true parallel development. Projects and organizations are able to manage team collaboration much more efficiently and effectively.

C++ Analyzer Add-in

The very mature and proven reverse C++ Analyzer from Rational Rose has been included with this latest release of Rational Rose RealTime. Now it's possible to take raw legacy code and import into a model. Legacy code will not use abstractions like capsules, ports and protocols so none of these constructs appear in the resultant model. But, the logical structure of a code set is imported.

Benefit

Import external library model abstractions and legacy code.

Support for Building Distributed applications (Rational Connexis Standard Edition)

Connexis provides users with an enhanced connectivity application development and debugging environment.

Connexis extends the asynchronous messaging used between capsules in Rational Rose RealTime so that it can be used between capsules located in different processes or different nodes in a network. It allows you to use unwired ports, based on protocols you define, to establish connections.

Connexis also includes several features to provide fault-tolerance capabilities to the applications you build with the Rational Suite DevelopmentStudio - RealTime Edition. The Connexis Locator Service, which can be used to find connection destinations, supports the use of a backup locator to automatically take over should the primary locator fail. Also, connection requests can specify alternate paths that will automatically be used should the primary path fail.

Connexis supports several common design patterns for building high-availability (fault tolerant) systems:

- Recovery to a backup service publisher when a primary publisher of a service fails
- Load sharing among publishers of a service
- Overflow to another service publisher when primary publishers are at capacity
- Recovery to a backup Connexis Locator Service should the primary Connexis Locator Service fail

Out of the box, Connexis Standard Edition supports UDP/IP transports.

The Connexis Standard Edition is only available as an integrated add-in to Rose RealTime in Rational Suite DevelopmentStudio - RealTime Edition.

Benefit

Since the same mechanisms are used for both internal and distributed communication, you can get started with Connexis very quickly without a steep learning curve. Furthermore, this greatly simplifies changes to the distribution of an application—since no code changes are required, an application can be easily split into different pieces.

Together, these features provide easy, convenient, and fault-tolerant connectivity. Instead of building your own distribution communications infrastructure, you can build additional revenue-generating features into your product. The result is that your product ships sooner with more features.

Enhanced Integrated Use-Case Management (Rational RequisitePro, Rose RealTime)

Integrated Use -Case Management now has a bi-directional integration between RequisitePro and Rational Rose RealTime. When business requirements are gathered using Rational RequisitePro, the resulting use-case artifacts (including graphical models, textual descriptions, attributes, traceability links and more) can be shared in joint ownership by Rational Rose RealTime and Rational RequisitePro, not just passed back and forth. Details on the requirements can also be accessed from Rational Rose RealTime. This Integrated Use Case Management is made possible by the deep integration between Rational Rose RealTime and RequisitePro.

Benefit

This enables every member of your team to easily access the use case information pertinent to them—providing analysts and developers each with their own view of what is relevant—all from the same, consistent pool of use case information. Integrated Use Case Management gives you a real-time window into the details of the use case (such as priority, change history, and release planning).

Improved Enhancement / Defect Management (Rational RequisitePro – ClearQuest)

Requirements can be associated to enhancement requests or to defects using Rational RequisitePro (from Attribute Matrix view or Requirement Properties Attribute tab).

- Enhancement request properties can be viewed in RequisitePro
- Associations are recorded in RequisitePro (new Enhancement Request and Defect attributes)
- Customizable via attribute labels in RequisitePro or record labels in ClearQuest

Benefit

Now the impacts of enhancement requests and defect repairs can be directly traced to system requirements. This helps ensure that changes and impacts are not lost and that the resulting system meets customer requirements.

Simultaneous Data Collection (Purify, PureCoverage)

Users now have the ability to collect Purify and PureCoverage data in a single run from Purify. You can select various levels of instrumentation for each run: line level, function level, or you can exclude functions from coverage.

Benefit

This saves the developer time and enhances productivity. It also keeps diagnostic information consistent for each run.

How to Implement RUP in Different Situations

RUP is customizable and should be tailored to the specific needs of the project or organization. The environment workflow has been expanded with descriptions on how to implement RUP in different situations. It's important to understand the basic approaches to implementing process and tools on a software development project. These approaches are:

- "Change everything". This means that the project adopts the entire Rational Unified Process and a complete set of new tools
- "Improve process and tools". This means that the project decides to improve some areas of the process and tools by adopting parts of the Rational Unified Process and supporting tools.

How much of the Rational Unified Process you adopt and how many new tools you decide to implement on a specific project depend on, the problems identified and prioritized for the project and the capacity for change.

Benefit

The Rational Unified Process is a customizable process framework that can be adapted to the way you work. These enhancements will help projects to avoid common pitfalls when introducing process and tools in an organization. This eases the adoption process and unifies the entire software development team by enhancing team communication and providing each team member with one knowledge base, one process language, and one view of how to develop software.

What's New in Rational Suite TestStudio

New Features at a Glance

New application lifecycle manager

Rational TestManager improves team productivity in all testing activities. TestManager provides the team with open planning, design, execution, and analysis for automated and manual tests from a single dashboard, integrates legacy and proprietary testing into an open framework, and continuously tracks team progress.

Integrated load and performance testing

You now have one-stop-shopping for your e-business and enterprise testing needs. Rational Suite TestStudio delivers effective, accurate, and easy-to-implement load testing under realistic, scalable user loads.

Flexible licensing options

Licenses for Rational testing products are no longer tied to a specific machine. You may now have multiple licenses on a single server, and a user may request a specific license. This ensures a single point of maintenance for all licenses.

New Feature Descriptions and Benefits

Functional testing

Support for Netscape

Rational Robot allows you to record functional tests on your Netscape browsers and play them back on either Netscape or Microsoft Internet Explorer.

Support for additional IDEs

Rational Suite TestStudio now supports Delphi V3.0, 4.0, and 5.0 and Oracle Forms V4.5, 5.0, and 6.0.

Benefit

Rational Suite TestStudio now provides greater flexibility in browser choice and development environment for functional test recording and playback.

Performance testing

DCOM/COM+ Protocol Support

Rational Suite TestStudio offers a new protocol that supports automated recording of DCOM/COM+ test scripts for use in multi-user performance tests against distributed components, including those deployed under Microsoft Transaction Server.

Support for Visual Basic and Java

TestStudio provides the tools necessary to execute performance testing scripts for application or components using Visual Basic and Java.

Test Script Services API

Rational Suite TestStudio has the ability to automatically test applications or components written in Visual C++.

Multi-User Playback

Rational Suite TestStudio offers playback, but not capture, of user-provided Java language scripts against Enterprise Java Beans. This allows you to test the performance of Enterprise Java Beans under a multi-user load.

Upgraded Protocol Support

Upgraded protocol support allows you to record and play back scripts that access SQL Server 2000 and Oracle 8.1. If you are recording and playing back SQL Server scripts, you no longer have to use the Sybase client libraries. Instead, you may use the SQL Server DB-Lib API.

Benefit

Rational Suite TestStudio gives you all the load/performance testing power formerly available only in Rational Suite PerformanceStudio, with many new updates for even more effective testing of your e-business application.

Web testing

Expanded Link Parsing

Rational SiteCheck can now parse links within JavaScript, such as those set using the Location object, provided the links don't use variables or calculations to determine the result.

New Path View

SiteCheck can now generate a set of hierarchical browse paths in which all pages of a site are visited at least once. Each path contains a unique group of links that represent how a user might drill-down into a site for information. You can run each path separately to simulate how a user browses information.

Silent Robot Script Playback

When a Rational Robot script is replayed for a Web site Compare verification point, SiteCheck now runs silently in the background.

Customized Reports

You can now create your own List View reports and customize standard reports using the new Report Editor dialog box.

Benefit

Rational Suite TestStudio has new features to make link checking more comprehensive than ever before.

Reliability Testing

PQC Log Information

PQC log information is now integrated into the Log Viewer.

New SQABasic Commands

A set of new SQABasic commands gives you more control over running Rational Purify, Quantify, and PureCoverage from inside a script.

Benefit

The updates to Rational Suite TestStudio not only give you more control but also provide an easier way to view what has been logged during testing.

What's New in Rational ClearQuest

New Features at a Glance

- Web Enhancements
- General Enhancements

New Feature Descriptions and Benefits

Web Enhancements

This document includes all new features and enhancements added since the ClearQuest 2000.02.10 release, including those released through patches, since those features and enhancements are all included in ClearQuest 2001.03.00.

The major focus of this release was to continue to enhance the ClearQuest Web interface, both in terms of functionality, look and feel, and general usability.

General ClearQuest Web Usability Enhancements

ClearQuest Web has been redesigned to be much more user friendly. The interface is now a much closer approximation of the Windows interface, and provides an intuitive, context-sensitive, tool bar to perform all major ClearQuest operations such as submitting records, finding records, creating or editing queries and reports, creating shortcuts, etc. Other improvements include:

- *Ability to include URLs in short and multi-line fields* - Users can now include live URLs in short and multi-line fields and click on them to visit other web pages. So, for example, you could list a URL in the comments field, and the reader could simply click on the link to go to the appropriate page as opposed to having to cut and paste the URL into their browser window.
- *Ability to display customized help text by mousing over fields* - By mousing over any of the fields, users can view the customized context help for that particular field.
- *Ability to display information on entries in list view controls* - By selecting an entry in the list view control and pressing the new Show button, users can view more information on the selected record. So, for example, you can view

and open child records associated with a parent record, directly from within the parent record.

- *Ability to find stateless record types using the Find a Record feature* - Users can now select either stated (default) or stateless record types and search on the unique key of either record type.
- *Ability to perform AND or OR operations in queries* - Users can now select AND or OR operators while creating or editing queries in the current query builder.

Perl Scripts now work on the Web

Due to improper support for multiple threads in CPAN's Perl (v 5.00502), the ClearQuest Web server could not be used with hooks authored in Perl. Specifically, the Web server would hang when multiple users accessed ClearQuest through the Web interface. This issue has been resolved by using Active State's Perl (v 5.6, build 616), which has support for multiple threads and multiple Perl engines. As a consequence, users can now author hooks in Perl and successfully deploy ClearQuest Web.

Advanced Web-based Query Builder

In addition to the current query editor, ClearQuest Web now provides a new advanced query builder. This Java-based applet allows Web users to create, edit and save complex queries. Users can create queries with groupings, use reference lists, etc, and can also save queries into the public folders provided they have appropriate privileges. Users now have more flexibility to create and edit queries directly through the Web interface, as opposed to having to create/edit them on Windows, and then run them on the Web.

Support for Secure Socket Layer (SSL)

ClearQuest Web now includes support for SSL. This enhances ClearQuest security by encrypting information sent from the ClearQuest Web server to a browser client. This is especially useful for projects where certain team members may be accessing ClearQuest data from outside their firewall.

Enhanced Web-based reporting

ClearQuest Web now provides some limited capabilities for creating and editing reports. Note that report formats still need to be created and edited on Windows, but now ClearQuest Web users can match specific queries with existing report formats to generate new data through the existing report formats. Previously, there was no capability to create or edit reports on the Web interface. Users could only click on specific reports to run them. Now, users can select, create, or edit a query and

choose which report format to attach it to, providing much more reporting flexibility directly from the Web interface.

General Enhancements

Support for IBM DB2 6.1

This extends ClearQuest's database support, which now includes Microsoft Access, SQL Anywhere, Microsoft SQL Server, Oracle, and IBM DB2.

Support for Oracle 8 and Oracle 8i (client and server)

ClearQuest now includes support for Oracle 8.0.5 and Oracle 8i/8.1.5, client and server.

Support for Crystal Reports 8

ClearQuest now supports the latest release of Crystal Reports.

Database Administration Enhancements

ClearQuest 2001.03.00 provides enhanced capabilities for moving master databases and user databases. Previously, when a master database was moved without using the ClearQuest database maintenance tool, there was no easy way to update ClearQuest's internal pointers. And options for moving user databases have also been improved, with new, more intuitive menu options.

Improved Test Database Setup

The "Test Work" option, previously limited to reviewing customizations on the Windows client, now enables testing of changes on the Web and UNIX clients as well. And, when setting up new databases, the administrator is prompted to define the database as either a test or production database, ensuring that ClearQuest does not allow production databases to be inadvertently used as test databases, and vice versa. Previously, the setup procedure could allow production databases to be used as test databases, resulting in irreversible changes being inadvertently applied to the production databases. With the new setup procedure, only specifically designated databases can be used for testing.

Internationalization

ClearQuest now provides Level 1 Internationalization support for Korean and Hebrew.

Support for SQL Anywhere 5.5.05

The previous release of SQL Anywhere (5.5.04) had some known defects, which have been resolved with SQL Anywhere 5.5.05. The major implication for ClearQuest is the ability to run the SQL Anywhere database server on Windows 2000, which did not work with version 5.5.04.

What's New in Rational Purify, Quantify and PureCoverage

New Features at a Glance

- Purify for Windows - Java Support
- Integration of Purify and RoseRT
- Quantify and PureCoverage for Windows now collect line-level information for Java
- Named user floating licenses available for Purify, Quantify and PureCoverage on Windows

New Feature Descriptions and Benefits

Purify for Windows - Java Support

Description

- Rational Purify now supports error detection in Java code
- Supports all Sun JDK 1.2.2-compliant JVMs
- Purify for Java identifies Java Methods that consume excessive memory or retain needed object references
- Works with or without source, so you can test third party components
- Familiar and easy point-and-click operation from the MSFT Visual Studio IDE

Benefit

In spite of Java's early promise of eliminating 'run-time errors' completely, Java developers today realize that memory management issues related to garbage collection can slow their application performance to an unacceptable level. Rational Purify enables you to visualize memory usage, including memory allocation and garbage collection. With the information Purify provides, you can dramatically improve memory consumption and application performance.

Rational Purify is easy to use and integrates well with existing processes so it doesn't disrupt the development lifecycle, even if it is adopted late in the project. Purify finds bugs in Java, C++ and mixed language (Java/C++/VB) programs.

Integration of Purify and RoseRT

Description

- Full integration with Rose RT
- Supported on Windows and UNIX

Benefit

If you're an embedded programmer, now you'll be able to easily enjoy the benefits of Purify while modeling and coding your application with Rose RT.

Quantify and PureCoverage for Windows now collect line-level information for Java

Description

- More detailed granularity now available beyond function level
- All three products now support Sun's JVM 1.2.2 on Windows

Benefit

Now you can see line-level performance and code coverage detail, giving you more information to help you improve your application's performance and quality.

Named user floating licenses available for Purify, Quantify and PureCoverage on Windows

Description

- Ability to license the product on a per-user basis rather than per-machine
- The registered user can use license on any machine

Benefit

Now you have an alternative to node-locked licenses for Purify, Quantify and PureCoverage! Named user floating licenses allow you to use your license on any machine on the network.

What's New in Rational RequisitePro

New Features at a Glance

- UCM Project Baselines
- Project Templates
- Improved Integration with Rational ClearQuest
- Rational RequisiteWeb Support for Apache Web Servers
- Requirement Names
- URL Attribute Type
- Rational RequisiteWeb Requirement Browser Dialog
- Internationalization

New Feature Descriptions and Benefits

UCM Project Baselines

Project administrators may now baseline their requirement assets with the rest of their development artifacts, putting all project artifacts under version control with Rational Unified Change Management (UCM) and Rational ClearCase. Baselines allow you to save a snapshot of your project and with this functionality users can make baselines of their projects and create new projects from those baselines using UCM.

Benefit

UCM Project Baselines let you baseline requirement assets with the rest of the development artifacts so everything is co-located and easily accessible. UCM Project baselines allow you to create a new project based upon an existing project from any previous baseline.

Project Templates

Rational RequisitePro now ships with three project templates that provide pre-configured documents types, requirement types, and attributes based on different usage models: a use-case template, a traditional template, and a composite (mixed use-case and declarative requirement) template. Using the Project Template Wizard users can also

create custom templates based upon their existing projects. These custom templates can include data and security in addition to the project structure.

Benefit

Using these out-of-the-box templates saves time in getting the project started faster, and promotes consistency across multiple projects. Users may also create customized project templates of their own that are adapted to their organization's specific needs, jumpstarting the creation of new projects with a "framework" of requirements that can be re-used across different projects.

Improved Integration with Rational ClearQuest

The integration with Rational ClearQuest has been enhanced with the ability to create new ClearQuest records from within RequisitePro. With the addition of this feature, the integration is equally powerful from either tool: users are able to create and associate to change request records in ClearQuest from the RequisitePro environment while they can also create and associate to requirements in RequisitePro from the ClearQuest environment.

Benefit

Better understanding the origin of requirements by linking to corresponding defects, enhancements or other change requests provides even more detail about the importance, priority and source of the need. It helps ensure your stakeholder needs are being addressed by the project requirements. With this improved integration, if a gap in functionality is observed in the requirements, an enhancement record can be immediately created in ClearQuest without leaving the RequisitePro environment. Similarly, activity records can be created to drive developer work in support of a requirement.

Rational RequisiteWeb Support for Apache Web Servers

Benefit

Rational RequisiteWeb was completely re-written using JSP technology. Performance improvements are found throughout RequisiteWeb. Additionally, RequisiteWeb may now be hosted on an Apache Web Server running on Unix or Linux in addition to Microsoft IIS.

Requirement Names

Requirement names allow you to assign a name to any requirement. The name may be up to 128 bytes long and include text, numbers or punctuation. Requirement names are displayed along with the requirement tag in views and dialog boxes, but not in documents. For existing users who have been maintaining an attribute to serve as a

requirement name, Rational RequisitePro provides a conversion wizard that allows you to populate the requirement name with the value of an existing attribute.

Benefit

Referring to a requirement by its full text can be cumbersome in day-to-day management of the requirements. By assigning names to requirements the user is able to easily refer to and organize the requirements of the project. The conversion wizard quickly recycles the work you've already done in naming your requirements.

URL Attribute Type

A new URL attribute type has been created that allows users to store a URL as a requirement attribute, and navigate to that URL from within a RequisitePro Attribute Matrix, or the Requirement Property dialog.

Benefit

Supporting information related to the project requirements may be accessed easily by clicking on the URL attribute.

Rational RequisiteWeb Requirement Browser Dialog

Benefit

Rational RequisiteWeb has been enhanced with a Requirement Browser dialog, making it easier to select particular requirements quickly.

Internationalization

Rational RequisitePro is now capable of installation and use on Hebrew and Korean operating systems, and it has been tested to assure conformance. Users must enter all input data (such as path names) using U.S. English.

What's New in Rational Robot

New Features at a Glance

- Rational Test Manager
- Support for Netscape
- Support for Delphi
- Proxy Mechanism for Third-Party Controls

New Feature Descriptions and Benefits

Rational TestManager

Rational Robot now includes the test-asset management capabilities of Rational TestManager.

Benefit

Rational TestManager improves team productivity in all testing activities by providing the team with consolidated test planning, design, execution, and analysis from a single dashboard, integrates legacy and proprietary testing into an open framework, and continuously tracks team progress.

Support for Netscape

Rational Robot now records functional tests on Netscape browsers and plays them back on either Netscape or Microsoft Internet Explorer.

Benefit

Rational Robot provides the thoroughness of testing your e-application's functionality on Netscape browsers.

Support for Delphi

Rational Robot comes equipped to be used in the most popular IDEs on the market, and now support for the Delphi IDE has been added.

Benefit

Those developing in the Delphi environment can now take advantage of Rational Robot for automated functional testing of their applications.

Proxy Mechanism for Third-Party Controls

Rational Robot's new proxy mechanism allows you to implement support for third-party controls in a surprisingly short time.

Benefit

Using third-party controls is not a problem when testing using Rational Robot.

What's New in the Rational Rose Family

New Feature Summary

Visual Modeling for the Entire Team

Customers, Business Analysts, e-Business Architects, and Data Modelers can design and communicate using ONE tool and ONE language

Powered by Rose

No other solution can offer the breadth and depth of capability required to support the complexity of developing and evolving resilient, mission critical web-enabled solutions

Accelerate through Architectural Excellence

For solutions that rely on WinDNA, J2EE, or Embedded technology, Rose 2001 accelerates implementation by automating proven architectural idioms for each solution

New Features at a Glance

- Language Add-ins
 - ANSI C++
 - Java
 - Enterprise Java Beans (EJBs)
 - Servlet Generation
 - Javadoc
 - Visual Basic
 - Visual C++
- Auto Layout Feature
- Model Integrator
- Data Modeling
- Rational ClearCase Add-in

- IA64 Platform Support

New Feature Descriptions and Benefits

Language Add-ins

ANSI C++

- Same solution for UNIX and Windows platforms
- Menus follow other language add-in menus
- Replacing Classic C++ over time
- Full ANSI C++ language support
- Better round-trip engineering of vendor libraries
- Improved round-trip engineering performance
- Code generation simpler to use
- Follows component based model of other language add-ins

Java

- Same solution for UNIX and Windows platforms
- Java add-in enhanced
- Enterprise Java Beans (EJBs)
 - Develop J2EE Applications using Enterprise Java Beans
 - Model, forward and reverse engineer EJBs quickly
 - Supports v1.1 EJB specification
- Servlets
 - Use the power of servlets in your Java applications
 - Configurable forward engineering
 - Supports v2.2 Servlet specification
- Javadoc
 - Built in color-coded Java editor (Multi-file, multi-language support)
 - Flexible documentation options (Javadoc and other styles)

- Enhanced user development experience
 - Modeless editor (Auto synchronization option)
- Support for your JDK version
 - Use JDK version of choice

Visual Basic

- Added language support for richer models
 - Enumerations
 - Typedefs
 - Nested classes
- More customizable
 - Specify .h and .cpp filenames
- Improved performance and RTE accuracy
 - Use of ANSI C++ parser

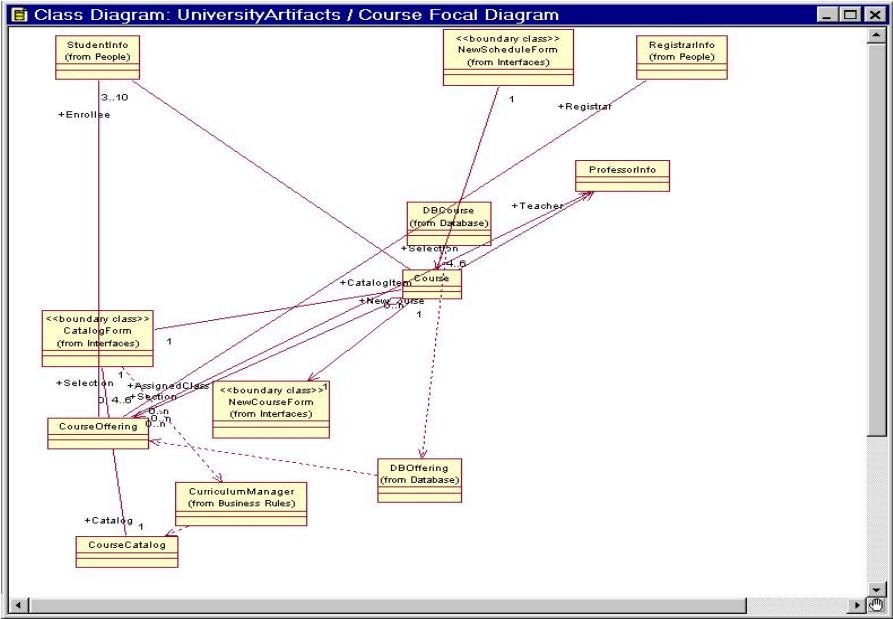
Visual C++

- More accurate parsing of VC++ source code
 - Using ANSI C++ parser
- Model more representative of source code
- Better RTE integrity
- Faster RTE performance
- RTE requires less memory
- Fewer VC++ untraceable errors

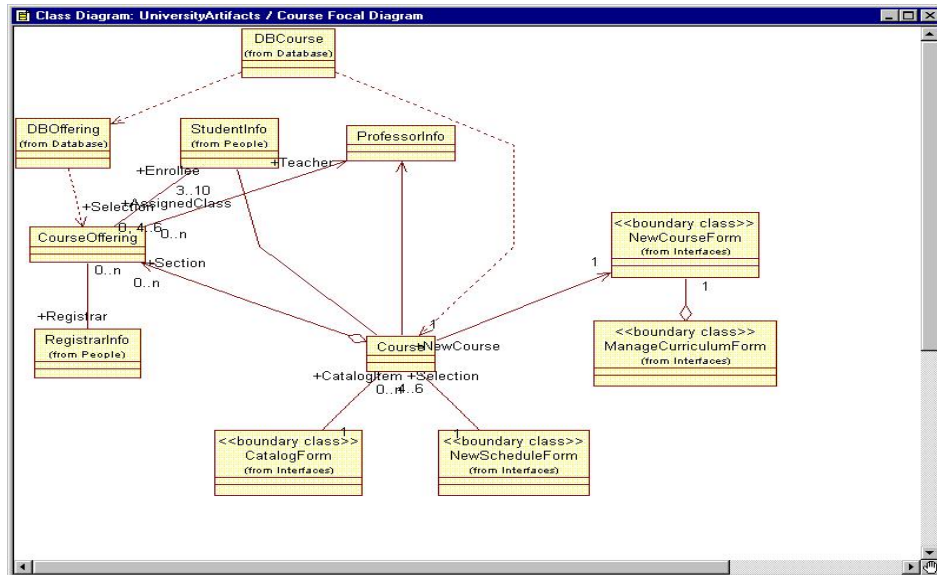
Auto Layout Feature

Major enhancements in this feature of Rose 2001 include:

Generated Model



After New Auto Layout



Model Integrator

- Improved Team Development
 - Enhanced merge algorithm gives better results
 - Finer granularity
 - Configure what is reported as a difference
 - Filter for pixel changes in the model
 - Reduce number of reported differences

Data Modeling

Note: Rose Data Modeler is only available on the Windows platform.

- Stored procedures
 - Stored procedure container mapped to utility class
 - Stored procedure mapped to operation

- Multiple stored procedures allowed per container
- Forward and reverse engineering
- Domain support
 - Global datatypes (Also known as user defined datatypes)
 - Reuse in multiple schemas
 - Each domain is a class
 - Change properties in one place automatically changed everywhere used
 - Using Rose Frameworks, always start with standards
- Compare and Synchronize
 - Visually show difference between data model and database or script file
 - Selectively update data model or database
 - Create script file or generate updates directly to database
 - Update in both directions with one wizard
- Schema Migration
 - Change a schema from one target DBMS to another
 - Reverse engineer one DBMS and forward it to another
 - Transforms datatypes
 - Enforces length rules
 - Creates copy domain package for new DBMS
- Alternate key migration
 - Migrate Unique indexes as foreign keys rather than primary keys
 - Ability to select the column to migrate
 - Done through the relationship editor
- Define candidate keys in the object model
 - Assign attributes as potential primary keys
 - Automatically transform candidate keys to primary keys in data model
- New Supported Databases
 - Sybase database support

- DB2 version 7 support
- Additional Enhancements
 - Display precision and scale on diagram
 - Show columns in physical order on diagram
 - Additional trigger UI
 - Many bug fixes in Object-Relational Mapping

Rational ClearCase Add-in

The ClearCase add-in has changed in several significant ways. Rose now works with the 4.0 and higher versions of ClearCase as well as with ClearCase LT:

- Improved Rose menus for ClearCase commands
- Non-available commands grayed out
- Rose launches ClearCase dialogs from menu

IA64 Platform Support

Rational and Intel have been working together to prepare Rational products for the IA64 platform. Rational Rose 2001 will be the version of Rose available for IA64 when IA64 is shipped. The hardware is not expected until Calendar year 2001.

What's New in Rational Rose Data Modeler

New Feature Summary

Significant changes have been made in the data modeling functionality in Rational Rose Data Modeler. With these changes, combined with the significant benefit of having all models in one notation, tool and language - data modelers, analysts and developers can now efficiently work together, capturing and sharing business requirements, and tracking them as their project evolves throughout the development process.

New Features at a Glance

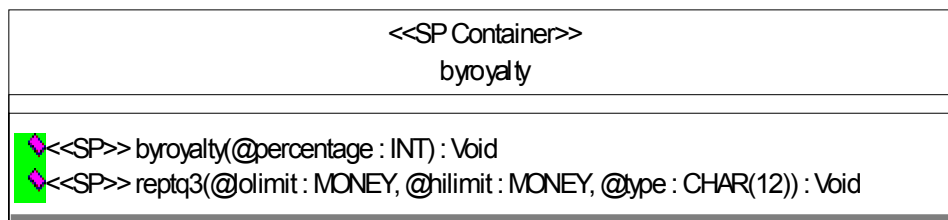
The new database modeling and design features that have been added to Rose 2001 are:

- Stored Procedures
- Domains
 - User Defined Datatypes
- Compare and Synchronization
- Schema Migration
- Alternate Key Migration
- Definition of Candidate Keys in the object model
- Sybase Database support
- DB2 Version 7 support
- Various bug fixes and minor enhancements
 - Display precision and scale on a diagram
 - Show columns in physical order on a diagram and browser
 - Additional Trigger UI
 - Performance enhancements
 - Many object-relational transformation bugs

New Feature Descriptions and Benefits

Stored Procedures

Support for Stored Procedures gives the ability to model, reverse engineer and forward engineer stored procedures. Stored procedures are modeled as operations within utility classes that are stereotyped as a <<SP Container>>. The operations for individual stored procedures are stereotyped as <<SP>>. Having the stored procedure held within a class allows the modeler to model in two ways, each stored procedure has its own container or they can share containers. This gives support for databases like Oracle 8i as it supports the concept of a stored procedure package (container), which has a package containing multiple stored procedures. Having the stored procedures as model elements is an important feature because the modeler can visualize the stored procedures and see what stored procedures are contained within the model. Other modeling tools allow for the creation of stored procedures, but they are just elements hidden behind the model and never visualized in a diagram.



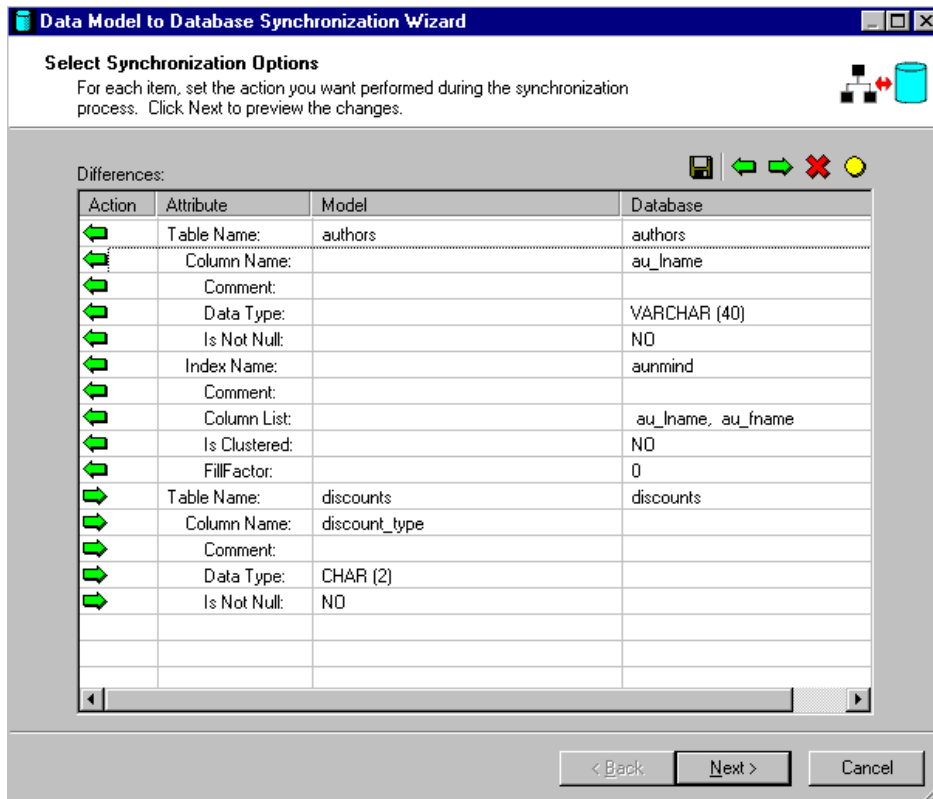
Domains

Domains give the modeler a tremendous advantage to enforce standards and reuse as well as object relational datatype mapping. Domains are classes that contain all properties of a column, but are not assigned to a particular table. They are global elements. You can assign a domain to any column within a model and the columns will use the properties of the domain as its own. The domain has a datatype, default, null option, unique option, length, precision, and check constraint. If you change the properties of a domain, for example the length, all columns using that domain are automatically changed as well. If a domain matches a type in the object model, the transformation from object to data model will automatically use that domain in the transformation. For example if you want the type String to always map to VARCHAR 25, just create a domain String with the properties of VARCHAR 25 and the mapping will happen correctly. Domains can also be created as Frameworks or controlled packages and will give the advantage of using the domains throughout modeling and use those domains for the different models that are being created in the organization. Domains are also known as User Defined Datatypes and can be generated to the databases that support them.



Compare and Synchronization

Compare and Synchronization lets the modeler visualize the differences between a data model and database or script file and selectively update the model, database or both. Although Rose will update a database directly, it is never recommended to update a production database directly as you could corrupt the existing data within the tables. The recommended way of updating the database is to create a script file of the differences and then use the tools that the databases provide to use the script to update the database and be sure to cleanse and preserve the data.

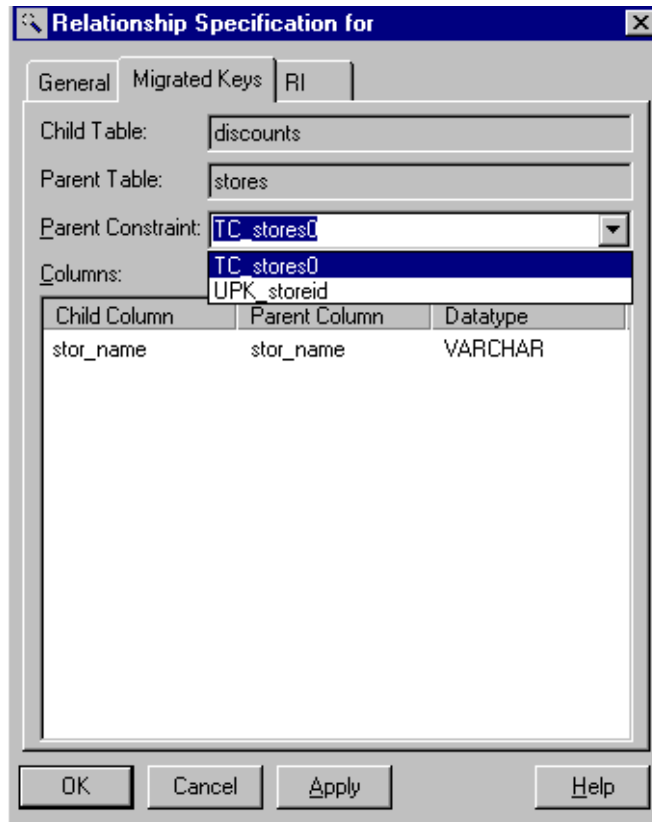


Schema Migration

Schema Migration changes a schema that is assigned to one database to another database version or type. By selecting a different database (other than the database to which a schema is assigned) will migrate the datatypes, constraint and enforce name length standards. If you have domains used with the particular schema, Rose will automatically create a new domain package for that particular database. You may lose some information that cannot be mapped between databases like stored procedures and triggers, but the elements that are not migrated will be noted in the log file.

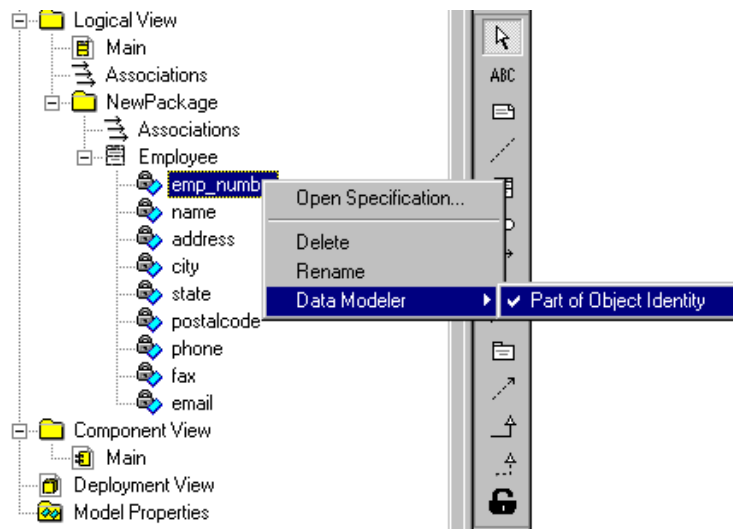
Alternate Key Migration

Alternate Key Migration allows the selection of which columns are to be migrated as foreign keys instead of the table's primary key(s). Often a table will have many primary keys and a database design decision is made to migrate only one of those keys. Alternate Key Migration will allow the designer to do this. A list of unique constraints is available for migration and Rose will automatically migrate the columns assigned to the selected unique constraint rather than the primary key constraint.



Definition of Candidate Keys

Rose has added the ability to assign a candidate key to an attribute in a class, which will create a primary key when transformed to the data model. This eliminates the automatic creation of primary keys in the transformation and uses the attribute as the primary key instead.



What's New in Rational SoDA for Word

New Features at a Glance

- Expanded integration with Rational and third party vendors
- Project templates can be stored in multiple directories
- New Options dialog allows for more personalization
- REPEAT commands can now be Recursive
- Rational ClearQuest domain now provides access to saved queries
- Improved quality in Generate Web Page and the Template View

New Feature Descriptions and Benefits

Expanded integration with Rational and third party vendors

- Reports can be generated from Microsoft Project data and Rational Administrator data

Benefit

The addition of new adapters provides access to MS Project information as well as expanding into more Rational products with Rational Administrator. With the new adapters, the reach of SoDA allows you to capture pertinent project data through even more sources.

- Tight Integration with Rational Administrator and Rational TestManager

Benefit

You are not only able to extract data from the Rational Administrator tool, thanks to the newly added adapter, but they can also run a SoDA report directly from Rational Administrator and from Rational TestManager. This can now be done directly from the respective tools menu selection.

Project templates can now be stored in multiple directories

Benefit

Instead of having all templates stored in the Templates directory, you can now store them in multiple directories, which allows you to save templates on a shared server directory or in multiple locations on a local machine.

New Options dialog allows for more personalization

- Set template directories
- Save graphics within document
- Set generated report path

Benefit

Provides more options to personalize your generated reports and documents by specifying graphics to be saved after generation. In addition, you can specify a location for the generated report to be placed instead of a mandatory location.

REPEAT commands can now be Recursive

Extract varying levels of nested data

Benefit

You have the option to use single command to traverse through and display multiple levels of data for nested information. For example if a package has a series of subpackages then the subpackage information will be presented in the report. In the past only the top-level package information could be retrieved with one command.

Rational ClearQuest domain now provides access to saved queries

Benefit

Better integration with Rational ClearQuest being able to utilize the queries that have already been created, saving time and not having to redo the work of separating out the various pieces of information that are needed for various reports.

Improved quality with Generate Web Page and the Template View

Benefit

Easier to generate a Web page and it's easier to use the template view to create/generate documents. A great deal of effort was placed in fixing existing bugs with the Generate Web Page and the Template View features.

What's New in Rational TeamTest

New Feature Summary

Rational TeamTest gives you a single tool for performance and distributed functional testing to help your software development team meet the demands of e-business schedules.

New Features at a Glance

Integrated load / performance testing

Rational TeamTest delivers effective, accurate, and easy-to-implement load/performance testing under realistic, scalable user loads.

Application lifecycle manager

Rational TestManager now improves the team's testing productivity with a robust tool to manage and control all testing activities from planning and design to execution and analysis, and to keep track of progress.

Simplified licensing

Licensing for Rational TeamTest has been simplified to one centralized license server, giving you a single management point for the collection and distributed of virtual testers.

New Feature Descriptions and Benefits

Performance testing

DCOM/COM+ Protocol Support

Rational TeamTest offers a new protocol that supports automated recording of DCOM/COM+ test scripts for use in multi-user performance tests against distributed components, including those deployed under Microsoft Transaction Server.

Support for Visual Basic and Java

TeamTest provides the tools necessary to execute performance testing scripts for application or components using Visual Basic and Java.

Test Script Services API

Rational TeamTest has the ability to automatically test applications or components written in Visual C++.

Multi-User Playback

Rational TeamTest offers playback, but not capture, of user-provided Java language scripts against Enterprise Java Beans. This allows you to test the performance of Enterprise Java Beans under a multi-user load.

Upgraded Protocol Support

Upgraded protocol support allows you to record and play back scripts that access SQL Server 2000 and Oracle 8.1. If you are recording and playing back SQL Server scripts, you no longer have to use the Sybase client libraries. Instead, you may use the SQL Server DB-Lib API.

Benefit

Performance testing gives you the load/performance testing power formerly available only in Rational LoadTest, with new updates for even more effective testing of your e-business application.

Functional testing

Support for Netscape

Rational Robot allows you to record functional tests on your Netscape browsers and play them back on either Netscape or Microsoft Internet Explorer.

Support for additional IDEs

Rational TeamTest now supports Delphi V3.0, 4.0, and 5.0 and Oracle Forms V4.5, 5.0, and 6.0.

Benefit

Rational TeamTest now provides greater flexibility in browser choice and development environment for functional test recording and playback.

Web testing

Expanded Link Parsing

Rational SiteCheck can now parse links within JavaScript, such as those set using the Location object, provided the links don't use variables or calculations to determine the result.

New Path View

SiteCheck can now generate a set of hierarchical browse paths in which all pages of a site are visited at least once. Each path contains a unique group of links that represent how a user might drill-down into a site for information. You can run each path separately to simulate how a user browses information.

Silent Robot Script Playback

When a Rational Robot script is replayed for a Web site Compare verification point, SiteCheck now runs silently in the background.

Customized Reports

You can now create your own List View reports and customize standard reports using the new Report Editor dialog box.

Benefit

Rational TeamTest has new features to make link checking more comprehensive than ever before.

What's New in the Rational Unified Process

New Feature Summary

Rational Unified Process, the on-line software engineering process guide and framework, has been extended with a number of enhancements for a broad spectrum of customers. Key customers, including Deloitte Consulting, Ernst & Young, Capital One, Ericsson, Volvo IT, Merrill-Lynch, Wells Fargo, Arthur Andersen, iXL, and eCAMPUS.com, have driven these enhancements. By partnering with IBM, Microsoft, and Applied Information Sciences we have produced variants of the Rational Unified Process for developing large e-business systems using IBM Content for e-business and for using the Microsoft Web Solution Platform.

The main areas of customization for the Rational Unified Process version 2001.03 are:

- New and improved support for the Microsoft Web Solution Platform and IBM technologies
- Improved support for e-business
- Improved customization and extensibility support.

New and improved support for the Microsoft Web Solution Platform and IBM technologies helps customers develop e-business applications more effectively when they are using these technologies. There is a new variant, "RUP with the Microsoft Web Solution Platform Content" which was developed jointly with Microsoft and Applied Information Sciences (AIS). This variant provides specific guidelines, templates, and examples for project teams developing applications for the Microsoft Web Solution Platform.

The "RUP with IBM Content for e-business" variant has been extended with a roadmap for developing large e-business applications using Rational Suite and IBM WebSphere™ Enterprise. RUP tool mentors and technical guidelines will also ship with IBM WebSphere™ Enterprise.

Improved support for e-business provides the user with additional content for developing web-centric applications. In this release this is primarily realized in the form of a new roadmap for using the RUP on small projects. Additional e-business examples have also been added.

Improved customization and extensibility support provides improvements in and additional options for customizing the process for adoption in their organization. There are three primary ways of doing this:

- Create a development case. The development case is a filter on the RUP that selects the activities to perform and artifacts to produce. Most customers will create a development case from the standard, unmodified RUP.
- Create a process or project Web site that reflects an organization or project's process with links to the appropriate sections of the RUP. Many customers will do this in conjunction with creating a development case.
- Create a customized process using the Rational Process Workbench (RPW). Some customers who require significant changes to the RUP and want to have their changes strongly integrated with the RUP will use RPW to do this.

Most customers customize the RUP using a combination of the first two methods. The RUP provides a Development Kit to aid this type of customization. The Development Kit contains additional guidelines and tool mentors for customizing the RUP.

This release of the RUP provides a new process or project Web site example as well as a new release of RPW.

New Features at a Glance

New and Improved Support for the Microsoft Web Solution Platform and IBM Technologies

These features are for customers who are doing e-business development using either the new Microsoft Web Solution Platform or the IBM technologies present in their WebSphere™ platform.

Specific to the Microsoft Web Solution Platform are guidelines, examples, and templates for building the Microsoft Web Solution Platform (Windows DNA-based) applications. Specifics of this feature are:

- Guidelines on technical infrastructure architecture
- Sample Windows DNA architecture patterns and implementation mechanisms
- Guidelines on COM+ component design
- Guidelines on configuring and deploying COM+ and IIS-based applications
- Guidelines on active server page (ASP) design
- Guidelines on universal data access (UDA) design
- Additional adaptations for the RUP workflows for building applications for the Microsoft Web Solution platform

For the development of e-business applications with IBM technologies the features are:

- A new roadmap for developing large-scale e-business applications using IBM WebSphere™ Enterprise Edition and Rational Suite
- RUP guidelines and tool mentors will ship with IBM WebSphere™ Enterprise Edition

Improved Support for e-business

These features are useful for anyone who is doing e-business development, regardless of the technology and platforms they use.

- The main feature provided is a new roadmap for using the RUP on small projects. Small teams develop many e-business applications in a short time period.
- Examples that apply to e-business applications have been added to the RUP.

Improved Customization and Extensibility Support

These features are for all customers who need to customize and extend the RUP for their organization and project.

- An improved process or project Web site
- The Rational Process Workbench (RPW) 2001.03 is available as a separate product for customers who need to make significant changes to the RUP. This version includes improved usability and flexibility and performance enhancements.

New Feature Descriptions and Benefits

New and Improved Support for the Microsoft Web Solution Platform and IBM Technologies

Guidelines, Examples, and Templates for building Microsoft Web Solution Platform Applications

The Microsoft Web Solution Platform is a new platform from Microsoft. The technologies addressed in this variant of the RUP are available today, and will be folded into the Microsoft Web Solution Platform as it becomes a product in the year 2001. The RUP provides early guidance on leveraging the technologies today.

Benefit

Users of the RUP are able to obtain expert advice on the best practices for using the latest technology from Microsoft. In conjunction with Applied Information

Sciences and Microsoft, the RUP provides information on the most effective ways of applying the technology to their e-business solutions. Any customer who is developing e-business applications for the Microsoft platform and want to maintain a leading technological edge will benefit from this major addition to the RUP.

A Roadmap for Developing Large-scale e-business Applications with IBM WebSphere™ Enterprise Edition

IBM is a leader in providing e-business solution technology. Their WebSphere™ platform is one of the major technology platforms for building large-scale e-business solutions. Rational and IBM, working together have provided a complete roadmap customized for organizations using WebSphere™ and the RUP in order to build enterprise-wide e-business solutions.

Benefit

Using the roadmap as a guide through the RUP, customers are assured of using a proven project strategy for developing enterprise-wide e-business solutions. The roadmap ensures the most effective application of the IBM WebSphere™ platform. Any customer who has been using the RUP with WebSphere™ or those who are starting to use RUP and WebSphere™ will benefit from this feature.

Additional Tool Mentors, Guidelines, and White Papers for IBM WebSphere™

Additions have been made to the set of tool mentors, guidelines, and white papers in the RUP that are applicable to the IBM WebSphere™ environment. These will ship with future versions of IBM WebSphere™ Enterprise and are available today from IBM's download Web site.

Benefit

Users of IBM's WebSphere™ environment gain detailed process guidance, providing them easy access to best practices gleaned from WebSphere™ experts. This guidance enables teams to successfully apply WebSphere™ more rapidly.

Improved Support for e-business

A New Roadmap for Using the RUP on Small Projects

Many e-business applications today are developed in short cycles with small project teams. The small projects roadmap has been provided to guide customers involved in such a project. Tailoring guidelines as well as examples of artifacts and role mappings show how a small project can use the RUP effectively.

Benefit

Customers who need to get adopt the RUP quickly, for a small project with a small project team, will benefit from this simplified path through the RUP that puts in place a tailored process more quickly and with less effort.

Additional e-business Examples

Examples that apply specifically to developing e-business applications have been added to the RUP.

Benefit

Customers have asked for more example artifacts. The additions give the RUP user concrete examples of how to apply the RUP and create artifacts specifically tailored to e-business development.

Improved Customization and Extensibility Support

An Improved Process or Project Web Site

The RUP has provided a sample project Web site for customers to copy and customize in previous releases. In this release the process and project parts of the Web site have been separated. This allows an organization to produce a reusable process portion of the Web site and enables each project to customize the Web site for things that apply only to their project. An example of this is the role map of actual people assigned to the project to specific roles used in the organization.

Benefit

This feature allows better control of the way the RUP is customized in an organization. It also provides more opportunity for reusing the process in an enterprise.

Rational Process Workbench 2001.03

Some customers require significant changes to the RUP because they need to integrate it with an existing process or they have unique requirements that will cause additional artifacts, activities, and perhaps complete additional disciplines. For these customers, Rational Process Workbench 2001.03 is available. This latest version builds on the foundation laid in the previous release. There are usability improvements to reduce the complexity of using the tool. There is also improved flexibility for defining RUP variants. Finally, the time to generate a new version of the process has been significantly reduced.

Rational Process Workbench 2001.03 is available as a separate product from Rational.

Benefit

For the customers who require the capability of making significant changes to the RUP, RPW provides the ability to make complex process changes in a controlled way, supported by automation. RPW extends the visual modeling capabilities of Rational Rose™ into the software engineering process domain. It provides the ability to create an enhanced version of a RUP-base process in a controlled way while minimizing the impact of reintegration with future versions of the RUP.

What's New in Rational University

New courses Available January, 2001

Advanced Rational Rose with Java2 Enterprise Edition

New, one-day, in-depth course covering how to model systems built using Java2 Enterprise Edition (J2EE).

- Understanding of J2EE allows developers and companies to create more complex code in a shorter period of time by being able to model these complex systems in Rose.
- In-depth training on Rational Rose with J2EE integration for System Architects, Designers and Implementers who need to be able to model, forward and reverse engineer and round-trip engineer components.
- Also beneficial to Development Managers who are looking for solutions to managing and speeding development of complex n-tier systems.
- Perfect complement to take following the completion of Fundamentals of Rational Rose, making this a two-day course offering.

Rational Rose RealTime

Three courses that offer students training tool-use and an advanced course specific to either C or C++ users. Each course is a two-day learning experience.

- Addresses customer needs by providing course training in either C or C++ environments thus focusing in on the tools specific to their projects.
- Maximizes students' learning experience by focusing on tool and lab training with little emphasis on methodology.

Fundamentals of Rational Rose RealTime

Beginning tool-use course

- Essential course to prepare students for one of the Advanced Rational Rose RealTime courses

Advanced Rational Rose RealTime with C

C language tool-use course

- Addresses techniques and challenges that are unique to a C environment

Advanced Rational Rose RealTime with C++

C++ language tool-use course

- Addresses techniques and challenges that are unique to a C++ environment

What's New in Rational Service Products

New Features at a Glance

- Rational Metrics Assessment
- Rational Architecture Capability Assessment
- Rational RequisitePro QuickStart

New Feature Descriptions and Benefits

Rational Metrics Assessment

The Rational Metrics Assessment is an off the shelf service product that assesses the overall success factors of your project's software development efforts as measured against modern, state-of-the-art, software engineering best practices. Rational's many years of experience in successfully introducing best practices are combined into an assessment service product that will provide project-wide recommendations where progress and quality measurements can be employed and/or improved in order to understand the state of a project and thereby improve ability for successful project completion.

Improving the quality of the developed software

- Creating a unified team in which each of the members of the team share a common view of the software under development
- Improving the communications between executive management, project management, and developers regarding the development process
- Reducing the risk of schedule slippage or missing features by better understanding the state of the project

Rational Architecture Capability Assessment

The Architecture Capability Assessment is an off the shelf service product that assesses the customer's ability to incorporate architecture into their organization, software development process, and infrastructure. The customer's architecture-related skills, organizational setup, use of process, tools, and modeling will be measured against modern, state-of-the-art, software engineering best practices. Rational will assess the customer development project/organizations from the specific point of view of architecting

software products and evaluates the readiness of a customer development organization to successfully architect its software products. Rational's many years of experience in successfully introducing best practices are combined into an assessment service product that will help the customer successfully architect its software products.

Understand project's current software architecture capability

- Identify and make key architecture risks visible, making it possible to devise and mitigate those risks
- Rapid assessment of capabilities resulting in an overall "score sheet" and a set of high-level observations and recommendations
- An external evaluation of current practices through interviews with key architecture stakeholders.
- Ensure project success by identifying opportunities for improvement

Rational RequisitePro QuickStart

The Rational RequisitePro QuickStart is a technology insertion plan designed to help your organization implement the best practices of Requirements Management leveraging the best-in-class technology found in Rational RequisitePro. This off the shelf service product follows a structured approach that considers all major aspects of the deployment of sophisticated technology. A well-defined set of activities and deliverables brings predictability and quality to the process.

- Clearly Defined Milestones and Deliverables
- Cost effective RequisitePro implementation
- Avoid common pitfalls normally associated with implementation
- Minimize the impact of process change by leveraging existing resources