IBM

Rational software

IBM Rational Rhapsody Developer for Ada

Highlights

■ *Offers Ada developers visual application modeling capabilities based on the Unified Modeling Language.*

■ *Enables system simulation and testing while automatically generating Ada code for deployment, including support for Ada 95.*

■ *Incorporates rules-based reverse engineering capabilities to aid existing code reuse.*

■ *Facilitates easy, rule-based code design, analysis, debugging and execution.*

■ *Supports numerous variants of Ada code to accommodate a wide range of needs and environments.*

It's an old adage more true than ever before: time is money — especially when it comes to software development. You need to improve software productivity, shorten the learning curve, and reduce software development costs if you are to stay competitive and speed time-to-value.

IBM can help. IBM® Rational® Rhapsody® Developer for Ada, a visual application development platform based on the Unified Modeling Language (UML) for the Ada systems and software developer, extends the system and software development process, including requirements capture and analysis, systems design, code generation, debugging, and testing for Ada applications to designers, developers, and engineers. Rational Rhapsody Developer for Ada model-driven development (MDD) environment includes highly flexible, compatible, code generation capabilities so you can easily make modifications to meet project needs and stakeholder preferences.

Increase software productivity while reducing software development costs

IBM Rational Rhapsody is one of the leading UML, SysML, DoDAF-based MDD environment for embedded systems, helping engineers and developers to create graphical models of a system that can be simulated and tested while automatically generating C, C++, Ada , or Java™ code that is directly deployable on the end product.

From enabling high-level systems design, to executing Ada code on target, Rational Rhapsody Developer for Ada allows you to more easily leverage the benefits inherent to working in an MDD, object-oriented (OO) environment. By reducing the Ada learning curve for engineers and developers, IBM's solution can help increase Ada software productivity and reduce development costs. In addition, by accessing integrated software and systems testing during development and enabling fast and effective debugging early in the software development process, Rational Rhapsody Developer for Ada can help you save both time and money while delivering a high quality Ada product to your customers.

Rules-based Ada code generation available

IBM Rational Rhapsody Developer for Ada with the rules-based reverse engineering capability provides you with the flexibility and control you need to leverage legacy code in new or evolving applications. The rules-based code generation is customizable, enabling users to deliver a quality product by conforming to well-defined development standards.

Code generation technologies rules editor

The development module provides generation technologies combined with executable environments and code generation capabilities that are based on existing third-party technology standards. With out-of-the-box templates and stereotype- and rules-based code generation, Rational Rhapsody Developer for Ada offers a flexible production environment to design, analyze, debug, and execute code. If changes to the generated code are necessary, such as in the coding style or the mapping from UML to Ada code, you can access the Rules Editor to edit the rules, macros, and scripts that control the generated code. The Rules Tracer feature simplifies the debugging process inherent to such changes and facilitates analysis and debug of rules execution with built-in differencing and merging capabilities.

Ada programmers accessing the Rules Editor tool benefit from its ability to create custom code from models generated in the IBM Rational Rhapsody Developer for Ada environment. This ability helps you to create the code (as text) precisely as needed, targeting special architecture specifications and constraints while incorporating intellectual property into the process.

Reverse engineering

IBM Rational Rhapsody Developer for Ada also features a practical reverse engineering process, which captures intellectual property for reuse in future designs. Rules-based reverse engineering provides the flexibility and control that enables Ada developers to leverage legacy code in new or evolving applications, and helps users to represent Ada code in the UML model, just as the developer wants it, as well as define the mapping specifications between the Ada code and the UML.

Model driven testing is used to reduce defects early in the production process and validate the results against the requirements. Using model driven testing, you can test your design against the requirements throughout the development process, leading to the early detection of design errors. Catching these problems before they are buried in the system can help save significant time and money.

The IBM Rational Rhapsody Gateway Add On is a seamless, bi-directional information exchange interface with third-party requirements and authoring tools to extend a complete traceability solution. This helps you to examine the upstream and downstream impact of requirements changes, in real time, at any level. This traceability empowers you to make educated decisions about possible changes that may be requested during the development process.

IBM Rational Rhapsody Designer for Systems Engineers features and benefits	
Feature	**Functional benefit**
• Local and remote client access	• Access to project assets from anywhere, anytime
• Flexible usage models: Unified Change Management (UCM) or base Rational ClearCase®	• Rational ClearCase meets the needs of any organization by offering UCM (an out-of-box usage model based on activity-based change management best practices) or the flexibility to implement virtually any process model solution

IBM Rational Rhapsody Developer for Ada system requirements

Minimum hardware requirements
Processor
• Intel® Pentium® 4, 3.0 GHz (Recommended)
Memory
• 512 MB RAM (Minimum)

Minimum software requirements
Operating System
• Microsoft® Windows® XP (SP1/SP2/SP3), Windows Vista® SP1

For more information

For more information on IBM Rational Rhapsody Developer for Ada, please contact your IBM marketing representative or IBM Business Partner, or visit

ibm.com/software/rational

Support for variants of Ada code

IBM Rational Rhapsody Developer for Ada supports numerous variants of Ada code to accommodate a wide range of needs and environments, such as Ada 83/95, SPARK, GNAT, and Green Hills IDEs. These include the Green Hills INTEGRITY version 5.0.4 with AdaMulti 4.0.7, ObjectAda by Aonix version 8.4 and 6.0 SP-3 (required for the IBM Rational Rhapsody Developer for Ada COM API), the AdaMULTI version 2000 by Green Hills, GNAT Ada 95 version 6.0.4, and Java 2 SDK version 1.4.2. Users can execute their own variants of code, while allowing end users to modify the rules to address particular needs such as code indentation, file naming conventions, and case vs. if statements. Also, all team members can implement new rules by selecting them from a drop-down menu.

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