



**Rational** software

## IBM Rational Test RealTime

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### Highlights

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- **Automates component testing and run-time analysis for host and target from a single testing environment**
- **Automates the creation and deployment of component test harnesses, test stubs and test drivers**
- **Profiles memory and performance, analyzes code coverage and visually illustrates run-time tracing**
- **Assesses code complexity and adherence to coding guidelines with static metrics and code review tools**
- **Enables host-based tests to be easily adapted to different targets without rewriting test procedures**
- **Enables you to test and analyze directly on the target**
- **Supports all common platforms—from an 8-bit microchip to a 64-bit RTOS**
- **Provides detailed code coverage information required for safety and mission-critical certification**

IBM Rational® Test RealTime™ software is a cross-platform solution for static analysis component testing and run-time analysis. Designed specifically for those who write code for embedded, real-time and other types of commercial software products, the Test RealTime product allows you to be more proactive in your debugging, enabling you to fix your code before it breaks.

### **Test, analyze and resolve problems during development**

The best time to find and fix bugs is during development. This is why IBM Rational Test RealTime software is focused on developer testing—the kind only you as the author of the code can perform effectively. You need to easily test the components you write and analyze the reliability and performance of your applications as they run on your host development system.

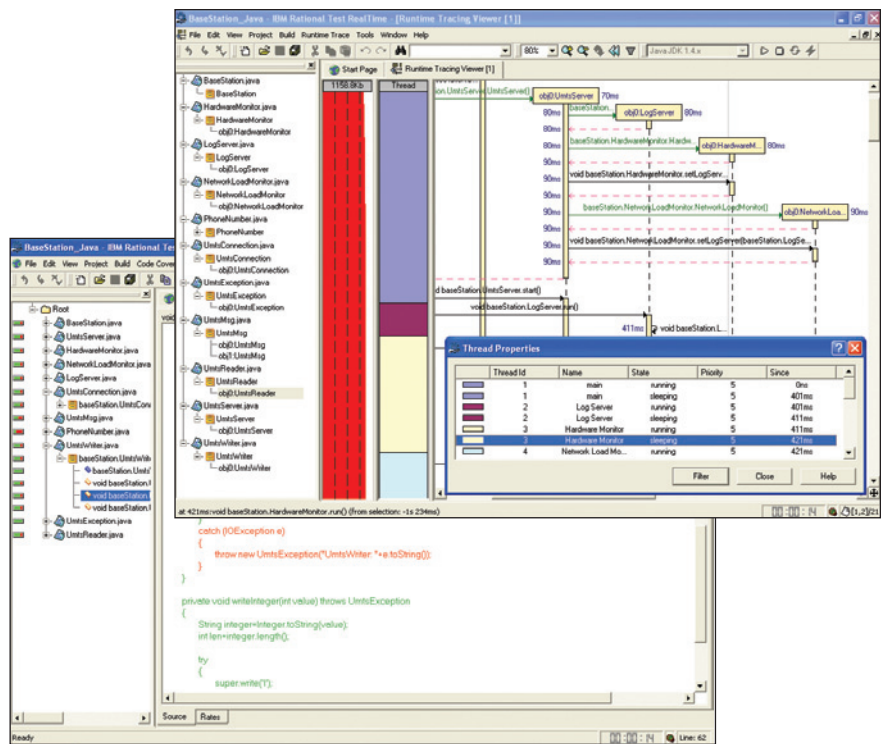
Rational Test RealTime software automates the creation and deployment of component test harnesses, test stubs and test drivers. With a single click from your development environment, you can profile memory and performance, analyze code coverage and visualize the behavior of your program execution. Fully detailed test and run-time analysis reports are connected via hyperlink to the relevant source code.

Only IBM Rational Test RealTime software combines component testing and run-time analysis into a single, integrated developer-centric testing solution.

### Test and debug both host and target

Given that your target hardware is often not available in a timely manner, host-based testing is important for embedded systems development. But developers cannot measure the quality of their work until they see it execute in the target environment. The situation grows even more complex when you have multiple types of targets that have to be tested.

IBM Rational Test RealTime software allows you to test and debug both host and target and to coordinate the two in a meaningful way. When your hardware is not available, you can simulate on the host and test for generic bugs. When the target is there, you can execute the same tests directly on the operational platform. The Rational Test RealTime versatile target deployment technology allows you to easily adapt your test procedures to any target and build environment without having to rewrite your tests. Only IBM Rational Test RealTime software lets you test and debug on the host and across multiple targets using the same test and analysis procedures.



The Rational Test RealTime GUI links your run-time analysis results directly to your source code, enabling code repairs without ever having to leave the tool.

### Harness the power of model-driven testing

The Unified Modeling Language (UML) can be used to visually lay out your application's design and test scenarios. IBM Rational Rose® Technical Developer software automates modeling with the UML and provides robust code generation to support model-driven development paradigms.

IBM Rational Test RealTime software extends model-driven development to include developer testing activities. The Test RealTime software provides a plug-in for Rational Rose Technical Developer software that allows developers to invoke run-time analysis

features on code generated from UML models. You can also visualize test case coverage via color-coded state machines in the Rational Rose Technical Developer application.

Only IBM Rational Test RealTime software integrates UML code across design and developer testing activities, providing the industry's broadest support for model-driven development.

### For more information

To learn more about IBM Rational Test RealTime software, visit:

[ibm.com/software/awdtools/test/realtime](http://ibm.com/software/awdtools/test/realtime)

Feature	Description	Benefit	Language support
<b>Component testing</b>	Automates creation and deployment of host- and target-based component test harnesses, test stubs and test drivers	Directly testing on the target increases confidence that the actual system will perform as expected test drivers	Ada, Java™, C/C++
<b>Code review</b>	Provides automated source code review for analyzing code against a set of predefined rules	Helps ensure that the source adheres to quality guidelines and standards	C
<b>Memory profiling</b>	Illustrates how a program's memory is being consumed and possibly leaked	Identifies the source of potential memory leaks before they occur, preempting performance issues and program crashes	Java, C/C++
<b>Performance profiling</b>	Identifies application-level performance bottlenecks	Pinpoints areas in the code that can be optimized for their performance	Java, C/C++
<b>Thread profiling</b>	Detects and analyzes multithreading problems, such as deadlocks and race conditions, as they occur in programs	Improves the reliability of multithreaded applications	Java, C/C++
<b>Code coverage analysis</b>	Identifies which portions of a program have not been tested	Avoids delivering code that is executed for the first time by the user or the target system running the application	Ada, Java, C/C++
<b>Run-time tracing</b>	Illustrates thread execution, function calls and variable values in programs as a function of time	Allows the developer to go back in time to review how a program behaved after execution has completed	Java, C/C++
<b>System testing</b>	Provides message-based unit and integration testing of C threads, tasks, processes and nodes	Saves time and money by avoiding the construction of dedicated test beds and related non-core business activities	C
<b>Target deployment technology</b>	Provides a versatile, low-overhead technology for enabling target-independent tests and run-time analysis	Helps ensure that your tests won't need to change when your environment does; test script deployment, execution and reporting remain easy to use	Ada, Java, C/C++
<b>Eclipse plug-in</b>	Eclipse user interface	Allows usage of run-time analysis tools with Eclipse C/C++ development tools on Microsoft® Windows® platforms without leaving the Eclipse environment	C,C++

System	Software	Hardware
<b>IBM AIX® 5L™, 5.2 or 5.3</b>	Ada, C, C++, Java (Java 2, Micro Edition [J2ME] and Java 2, Standard Edition [J2SE])	IBM RS6000
<b>HP-UX 11.0 or 11.11</b>	Ada, C, C++, Java (J2ME/J2SE)	Hewlett-Packard PA-RISC
<b>Linux®, Red Hat Linux 8.0, Red Hat Enterprise Linux WS 3.0 and 4.0, SUSE Linux 8.1 and 9.1, Novell SUSE Linux 9.3</b>	Ada, C, C++, Java (J2ME/J2SE)	Intel® IA 32
<b>zLinux for IBM (s390x architecture, Red Hat Enterprise Linux 4.0)</b>	C, C++ languages only	IBM @server® zSeries®
<b>Other</b>	Ada, C, C++, Java (J2ME/J2SE); O/S unlimited microchip and real-time operating system (RTOS) support	Unlimited
<b>Sun Solaris 2.7, 8, 9 or 10</b>	Ada, C, C++, Java (J2ME/J2SE)	Sun Sparc
<b>Microsoft Windows 2000, Windows 2003 and Windows XP</b>	Ada, C, C++, Java (J2ME/J2SE)	Intel IA 32



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