



Rational software

IBM Rational Ada Developer family

Highlights

- **Comprehensive Ada 95/83 and UNIX-based C/C++ development environment**
- **Integrates editors, optimizing compilers, multi-lingual debugger, configuration management, code browsing, visual modeling, and process automation tools**
- **Host support includes major UNIX & Linux platforms**
- **Integrated with a mature production quality C/C++ compiler for developing mixed language applications**
- **Provides host-consistent user interfaces and uniform compilers and debuggers**
- **Supports embedded, real-time, and cross-platform development**
- **Target processors include PowerPC, MIPS, M68K, Intel x86 family, and the radiation hardened RH-32**
- **Offers choice of real-time operating systems, including Wind River's VxWorks (and VxWorks AE) and LynuxWorks' LynxOS**
- **Provides comprehensive support for target-level debugging**
- **Host-based instruction-set simulation for PowerPC, MIPS, and RH32**
- **POSIX-compliant interfaces**
- **Integrated standardized test generation and management**
- **Integrated visual modeling, source code generation, and reverse engineering of existing source code using industry standard UML notation**
- **Integrated defect tracking and change management**
- **Offers a consistent development environment across multiple hosts and targets**
- **Offers support for safety-critical applications**

The IBM® Rational® Ada Developer family of products is the industry's development environment of choice for Ada and mixed Ada/C/C++ applications. Powered by IBM Rational Apex, this product provides a single, scalable environment that integrates design, implementation, testing, configuration management, and process management for even the largest application development projects. It provides the industry's best uniform solution for creating and deploying multi-platform UNIX and Linux Ada applications.

The IBM Rational Ada Embedded Developer products extends the development experience into embedded target environments. This powerful cross development system combines the host environment with time-tested embedded technology for host to target development of real-time embedded systems. The result is the most powerful Ada development environment for embedded systems ever available.

Comprehensive integrated development environment

Rational Ada Developer is designed specifically for large teams. Such teams have automated tooling needs that go beyond that of a compiler and debugger. Rational Ada Developer supports the full lifecycle of development needs, from visual design to testing. And all of these tools are integrated in one common environment, making for the most productive development experience available today.

Architectural Control

Rational Ada Developer provides unique architectural control features that are essential for developing and managing large-scale applications. Such applications are difficult to design, and when improperly architected, are even more difficult to maintain. Rational Ada Developer ensures architectural integrity of the design throughout the software lifecycle.

Integrated configuration management

Large applications typically have special needs for configuration management. Managing change becomes extremely complex with the addition of more development staff. Rational Ada Developer includes unique technology for controlling versions and configurations in such an environment, leveraging architectural subsystems that reside above the programming language constructs. Rational Ada Developer is also integrated with IBM Rational ClearCase for customers who already invested in a CM solution from IBM.

An integrated embedded development solution

Rational Ada Developer supports embedded cross-compilation as well as native compilation. Based on its unique technology, Rational Ada Embedded Developer seamlessly extends the host-based development tools to working directly on the target execution platform. The result is less redundancy in development tools, higher productivity, and less re-work needed from modifications.

A track record of best practices

Rational Ada Developer is more than just a set of loosely integrated development tools. These tools were designed specifically for large-scale team-development of applications that have a long life-cycle. Such applications can survive only when they are developed with sound software engineering best practices in mind. Only IBM Rational Ada Developer addresses the fundamental issues surrounding the challenges of large-scale modern software engineering.

Family Feature Matrix

Components	Description	Rational Ada Developer Enterprise Edition	Rational Ada Embedded Developer Enterprise Edition	Rational Ada Developer Base Edition	Rational Ada Embedded Developer
Apex Duo Native	Integrated development environment for host-based Ada 95/83 and mixed Ada/C/C++ development	X	X	X	X
Summit TM	Integrated activity and task management	X	X	X	X
Summit CM	Integrated configuration management	X	X	X	X
Integration with IBM Rational ClearCase	Integration with the world's leading configuration management system	X	X	X	X
Rational Rose	Visual modeling for Ada and C++	X	X		
TestMate Duo	Integrated host platform testing for Ada and C/C++	X	X		
TestMate Cross	Cross-platform testing for Ada		X		
TestMate MCDC	Structural testing (statement, decision, MCDC)		X		
Apex Embedded Duo	Integrated development environment for cross-platform Ada 95/83 and mixed Ada/C/C++ development		X		X
Instruction Set Simulator (ISIM)			X		X 1
Ethernet support (EneT)			X		X 2
Patching linker			X		X 1

1. This product available for MIPS and RH32 targets only.
2. This product available for MIPS, x86, and M68K targets only.

Features and Benefits

Feature	Description	Benefit
Controlled iterative development	Smaller increments of change can be edited, built, tested, and deployed	Reduces risk, improves time-to-market
Object-oriented technology	Environment supports notion of encapsulating information and restricting access and manipulation to only meaningful operations	Simplifies communication about real-world constructs; Improves reliability of accessing and changing data
Architecture-based design	Includes facilities for creating software structures (sub-systems) larger than that provided by the programming language itself	Fosters large-scale software reuse; Creates software that is adaptable in response to changing operational conditions
Iterative testing throughout	Testing tools provided directly within development environment allow for frequent development lifecycle	Bugs are found sooner, corrected more cost-efficiently developer-led testing
Integrated development environment	All tools needed for developer are organized as integral parts of the development environment	Less switching between multiple disparate tools
Integrated Configuration Management	CM commands and facilities built into development environment	Manages parallel development simply and without high overhead; CM system more transparent to developers, less intrusive to work activities
Architectural Control	Manages dependencies between source files at a level higher than that provided by the programming language itself	Maintains architectural integrity of application amidst changes; New features are introduced with less side-effects
Incremental Compilation and Fast Path Recording	Compilation system analyzes actual code changes to reduce effort required to rebuild an application	Dramatically reduced system build times; optimal code generated
Same host/target development environment	Same set of tools, same interface for developing host applications and embedded target applications	Increased productivity of developers, higher reliance on host-based development/testing for embedded applications

IBM Rational Ada Product Family Platform Support

	Solaris	Linux	HP-UX	IRIX (SGI)	Tru64 (Compaq)	AIX (RS/6000)
IBM Rational Ada Developer Enterprise Edition	X	X				
IBM Rational Ada Embedded Developer Enterprise Edition	X	X				
IBM Rational Ada Developer			X	X	X	X
IBM Rational Ada Embedded Developer	X					
AXI for IBM Rational Ada	X	X	X	X	X	X

IBM Rational Ada Embedded Product Family Target Architecture Support

	PowerPC	MIPS	x86	M68K	RH32
IBM Rational Ada Embedded Enterprise Edition	X				
IBM Rational Ada Embedded Developer		X	X	X	X

IBM Rational Ada Embedded Product Family RTOS Support

	Rational Exec	Wind River Tornado II	Wind River Tornado AE	LynuxWorks LynxOS
IBM Rational Ada Embedded Developer Enterprise Edition	X	X	X	X
IBM Rational Ada Embedded Developer	X	X ¹		

¹ Support for Tornado is not available for the RH32 architecture.



About IBM Rational software

Rational® software from IBM helps organizations automate and integrate the core business process of software development. Rational products, services and best practices power the IBM Software Development Platform, the premier platform for teams who discover, develop, and deploy software assets in business applications, embedded systems, and software products. This modular and complete solution enables teams to adopt a business-driven development approach based on open standards, including the Eclipse open source framework. The result is differentiated business performance. Additional information is available at ibm.com/rational and ibm.com/developerworks/rational/rationaledge, the monthly e-zine for the Rational community.

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*Rational ClearQuest integrates with Crystal Reports Professional Edition for advanced reporting capabilities.

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