Rational® software

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Build and Test IT Applications with the IBM Rational Professional Bundle

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ON DEMAND BUSINESS™

Contents

Introduction

The IBM® Rational® Professional Bundle includes all the desktop tools your enterprise needs to design, construct, and test J2EE/portal/service-oriented applications on both Microsoft® Windows® and Linux, as well as test .NET applications. The tools are architected for adoption ease, since they are all installed inside the same Eclipse-based application shell. Eclipse is an open, extensible industry-supported platform designed for building Web sites, Java™, and C++ applications.

The tools in the Rational Professional Bundle can help accelerate software development by integrating systems analysis, design, coding, and developer and systems test activities around a common underlying tool infrastructure. This simplifies the developer's ability to learn the tools and makes it easier for him or her to share information with the rest of the team. The bundle's built-in version control and integration with other team tools can enable developers to protect team assets, create and manage requirements, track quality-management efforts, and understand how a change in one project artifact could conceivably impact others.

The Rational Professional Bundle's developer-focused tools are optimized for WebSphere software and provide strong support for developing for other J2EE-technology platforms. A built-in server on the local machine can facilitate convenient iterative development by performing unit testing, debugging, component testing, and functional testing during the development phase. This can contribute to tremendous productivity and cost-saving benefits.

The Rational Professional Bundle supports geographically distributed teams through a flexible, floating license model. It comes with one license and just one support contract to manage. Small, centrally located teams can take advantage of the authorized user license model. The Professional Bundle is an integral part of the IBM Rational Software Development Platform, a complete, open, modular, integrated, and proven software development solution.

**One bundle of desktop tools with one
license and maintenance agreement**

- **Flexible licensing
  to meet your needs**

- **Develop and test applications
  more productively than ever**

- **Optimized for IBM middleware**

- **Integral part of the IBM Software
  Development Platform**

- **Capabilities for the Developer**
  - **Web and rich client rapid
    application development**
  - **Easy transition from mainframe
    to J2EE development**
  - **Productive J2EE/EJB tooling**
  - **Portal/Portlet development tools**
  - **Web services tools**
  - **Static code review and runtime
    analysis tools**
  - **Automated Java/Web Service
    unit testing**

- **Capabilities for the Architect**
  - **UML 2.0 modeling**
  - **Pattern/Transform authoring**
  - **Structural analysis and control**
  - **UML Language transforms**

- **Capabilities for the Tester**
  - **Manual test generation
    and execution**
  - **Automated functional
    regression testing**
  - **Load and performance testing**

The Rational Professional Bundle tools

There are seven tools included in the Rational Professional Bundle; four are
design and construction tools and three are testing tools. The installation of
Rational Software Architect, Rational Application Developer, and Rational
Functional Tester include Rational ClearCase LT to provide version control
for small to midsize teams. In addition, the Professional Bundle features
two process guidance configurations: Rational Software Architect includes
a configuration for software architects and Rational Application Developer
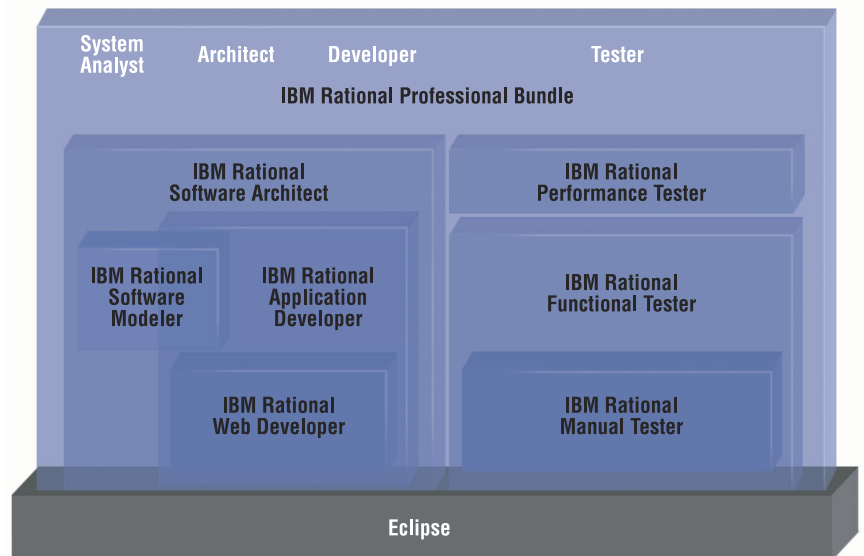includes one for developers.

Figure 1. The Rational Professional Bundle Tools

The IBM Rational Professional Bundle desktop tools are architected for adoption ease, since they are all installed inside the same Eclipse-based application shell.

The products in the Rational Professional Bundle are:

- Rational Web Developer. This tool helps you build dynamic Web applications, Web services, or Java applications. It is an easy-to-use IDE for visually constructing, testing, and deploying applications. It leverages JSF for rapidly constructing rich web user interfaces, and EGL for modernizing legacy systems in a more procedural programming style.

- Rational Application Developer. This tool helps you build Web applications, Web services, Java applications, J2EE applications, and portal applications. It is a comprehensive IDE for visually designing, constructing, testing, profiling, and deploying applications.

- Rational Software Modeler. This tool helps you clearly define and communicate specifications, architecture, and designs to stakeholders. It is a visual modeling and design tool that leverages the UML to document and communicate the different views required to support analysis and design.

- Rational Software Architect. This integrated design and construction tool helps you develop applications for the Java platform or in C++, as well as well-architected applications, including those built to a Service Oriented Architecture (SOA). It unifies UML modeling, Java structural analysis, Web services, Java/J2EE, data, XML, Java and Web development, developer-level testing, and process guidance.

- Rational Manual Tester. This manual-test-authoring and execution tool promotes test step reuse to reduce the impact of software change on testers and business analysts.

- Rational Functional Tester. Testers and GUI developers who need superior control for testing Java, Web, and Visual Studio .NET Winform-based applications can use this advanced, automated functional and regression testing tool.

- Rational Performance Tester. This performance-test-creation, execution and analysis tool is for teams validating the scalability and reliability of their Web-based applications before deployment.

*Eclipse is an open, extensible
industry-supported platform designed
for building Web sites, Java™,
and C++ applications.*

Develop and test applications more productively than ever
IBM uses the award-winning Eclipse platform as a basis for the Rational Professional Bundle application development tools. These products benefit from integrated quality-assurance testing as well as IBM product support. They use the same interfaces and build upon the technology shared with the Eclipse platform.

The Professional Bundle provides the greatest flexibility for individual practitioners to install and use the tool(s) they need to do their job and to easily use any tool as their role changes or as they need to perform new tasks. The tools are architected for adoption ease, since they are all installed inside the same Eclipse-based application shell.

Eclipse has received wide acceptance. It is now a vibrant and growing ecosystem with more than 18 million downloads, hundreds of available plug-ins, and more than 50 companies actively contributing to it.

Built on Eclipse 3.0 open source technology

Eclipse is an open, extensible industry-supported platform designed for building Web sites, Java™, and C++ programs. It is fast becoming a popular framework for cross-platform development for the Linux and Windows operating environments.

Eclipse provides a common set of services that tools developers need. For example, all tools have a user interface, a way to let users interact with the tool functions. Eclipse provides a user interface framework that simplifies the task to build user interfaces, and guarantees that the interface is consistent with the rest of the workbench and with all other tools. Another example is a common framework for storing and retrieving data and a common model for sharing data with other tools. All tools need editing facilities, so the Eclipse platform provides a common editing framework. The Eclipse platform's design simplifies the development of integrated tools. To make this possible, Eclipse comes with a plug-in architecture and tools that allow tool builders or developers to create any kind of functional extensions or adapt their tools to work with the rest of the workbench. You can assemble tools from different suppliers to make a tool environment the way you want it. Developers love it since they have better things to do than integrate tools.

Eclipse.org, now a non-profit corporation that oversees the universal tooling platform's development and evolution, has open-sourced and managed the platform. IBM was the initial major contributor to Eclipse, donating more than $40M in software and R&D investment to the project. Since then, Eclipse has received wide acceptance. It is now a vibrant and growing ecosystem with more than 18 million downloads, hundreds of available plug-ins, and more than 50 companies actively contributing to it.

By providing a common interface, an optimized process that closely parallels how developers work, and the ability to support collaborative development with a common user model, the Eclipse platform enables increased productivity while leveraging existing and newly acquired tools. The Eclipse architecture enables easy data integration between tools, vendors, and the open source community. By providing a consistent usage model between roles, it enables accelerated learning of Eclipse-based tools.

Design and construction tools

IBM provides a range of design and construction offerings to make
development faster and easier; maximize quality, robustness, and reusability;
maximize the value of both code and models; and allow development teams to
choose the development paradigms that fit them best. These solutions include
tools for traditional coding, code visualization, visual editing, modeling and
round-trip engineering, legacy integration, rapid application development,
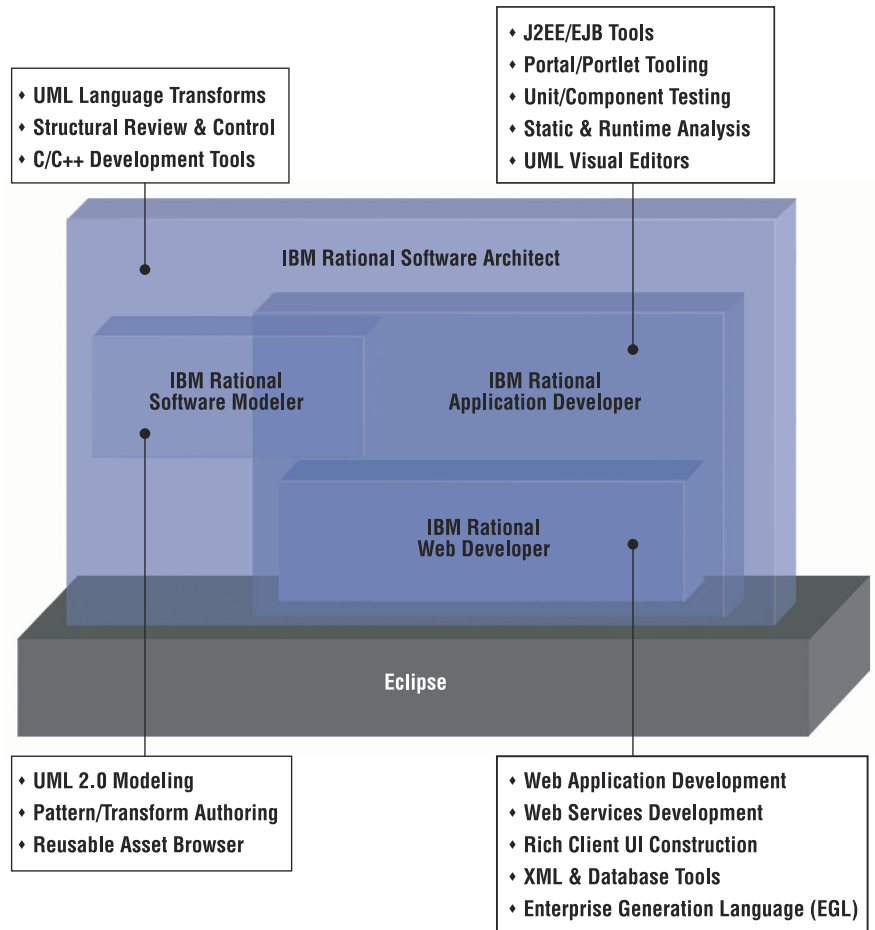and model execution.

* J2EE/EJB Tools
* Portal/Portlet Tooling
* Unit/Component Testing
* Static & Runtime Analysis
* UML Visual Editors

* UML Language Transforms
* Structural Review & Control
* C/C++ Development Tools

IBM Rational Software Architect

**IBM Rational
Software Modeler**

**IBM Rational
Application Developer**

**IBM Rational
Web Developer**

Eclipse

* UML 2.0 Modeling
* Pattern/Transform Authoring
* Reusable Asset Browser

* Web Application Development
* Web Services Development
* Rich Client UI Construction
* XML & Database Tools
* Enterprise Generation Language (EGL)

Figure 2. IBM Rational Professional Bundle: Design and Construction Tools

*IBM allows development teams to
choose the development paradigms
that fit them best.*

Software developers typically need an integrated development environment (IDE). The IBM Rational Professional Bundle provides several capabilities for organizations that want to develop software in Java, COBOL, PL/I, and other languages. If your organization is developing Java and J2EE applications, you can leverage IBM Rational Web Developer for WebSphere Software and IBM Rational Application Developer for WebSphere Software. IBM Rational Web Developer for WebSphere Software offers an easy-to-use IDE with high-productivity RAD tools for building and maintaining dynamic Web applications, Web services, and Java applications. Rational Application Developer for WebSphere Software adds comprehensive tools for building and maintaining portals and J2EE applications as well as UML visual editing, performance-testing tools, and entry-level version control and team support to Rational Web Developer for WebSphere Software.

Rational Software Architect builds on Rational Application Developer for WebSphere Software to offer software architects and senior developers a rich set of model-driven development capabilities for unifying all aspects of software architecture. Finally, the Professional Bundle includes Rational Software Modeler, a UML-based visual modeling and design tool that helps you ensure that you clearly define and communicate specifications, architecture, and designs to stakeholders.

For software organizations constructing software systems, IBM Rational Software Architect supports both code and model-centric C and C++ development. It provides a comprehensive, Eclipse-based IDE that provides UML 2 modeling support, patterns and transformations, code visualization, and language support. Leveraging Rational Software Architect, organizations can build component-based architectures and designs. Then by utilizing model transformations, they can transform these designs to code or visualize existing legacy code.

*Each developer can do unit testing,
debugging, component testing, and
functional testing before integrating
his or her source code with the
project's central code base.*

Optimized for IBM middleware
The Rational Professional Bundle drives application development that is
optimized for WebSphere software and other J2EE-technology platforms.
There is a built-in server on the local machine that facilitates convenient
iterative development by doing unit testing, debugging, component testing,
and functional testing during the development phase. This has tremendous
productivity and cost-saving benefits.

The develop-for-WebSphere support that IBM Rational Application Developer
provides includes a rich set of visual design tools, wizards, and other
accelerators that ease creating applications targeted for WebSphere Application
Server or WebSphere Portal Server. Rational Application Developer even
has special tooling that would let COBOL-skilled developers be productive
on WebSphere projects. Further, it includes WebSphere Application Server
and Portal Server test environments, so each developer could do unit testing,
debugging, component testing, and functional testing before integrating his or
her source code with the project's central code base.

*Version control for small
to midsize teams.*

Built-in version control with Rational ClearCase LT
Included in the installation of Rational Software Architect, Rational
Application Developer, and Rational Functional Tester, IBM Rational
ClearCase® LT provides version control for small to midsize teams. Rational
ClearCase LT is part of the IBM Rational ClearCase product family that can
scale from small project workgroups to the distributed, global enterprise. From
within these products, developers can directly access Rational ClearCase LT
functions from perspectives, views, menus, toolbars, and context-sensitive pop-
up menus. This allows developers to interact with Rational ClearCase LT in the
same way they interact with their IDEs. It also enables developers to efficiently
support collaborative development with a common user model. Teams with
projects that don't require distributed servers, database replication, advanced
build management, or transparent file access can start with Rational ClearCase
LT. As your team begins to require these enterprise-level SCM functions, you
can seamlessly trade-up to Rational ClearCase without retraining your team—
or changing your process, data, or tools.

*Process guidance for software
architects and developers.*

Process guidance with the Rational Unified Process (RUP)
There are two process guidance configurations inside the Rational Professional
Bundle. Rational Software Architect includes a configuration for software
architects and Rational Application Developer includes one for developers.
Rational Software Architect and Rational Application Developer are enabled
with three viewpoints into RUP through the Process Advisor, Process Browser,
and Search; a separate RUP browser is not required. The three RUP
viewpoints are:

- Process Advisor: As the practitioner creates, selects, and edits a UML
  diagram or element, RUP updates the guidance to provide links that are
  specific to the activities performed.

- Process Browser: This browser has an Eclipse look and feel
  that provides a single user interface for the practitioner to search
  and browse process guidance.

- Search: This provides simple or advanced guidance search capabilities.
  The search results surface directly in the IDE; clicking on a search result
  link will bring up the Process Browser with more detailed content.

*Automate many time-consuming and
tedious activities to do more testing
in less time.*

Software quality tools

The goal of any software development effort is to create high-quality applications. But what exactly does "quality" mean? Quality is an experience—the sum total of end-user impressions about how well a tool addresses their needs. It is a combination of perceptions about an application's functionality, usability, reliability, performance, scalability, and a host of other characteristics. To fulfill this tall order, development organizations must commit to building quality into their applications from the beginning; otherwise, time works against project success.
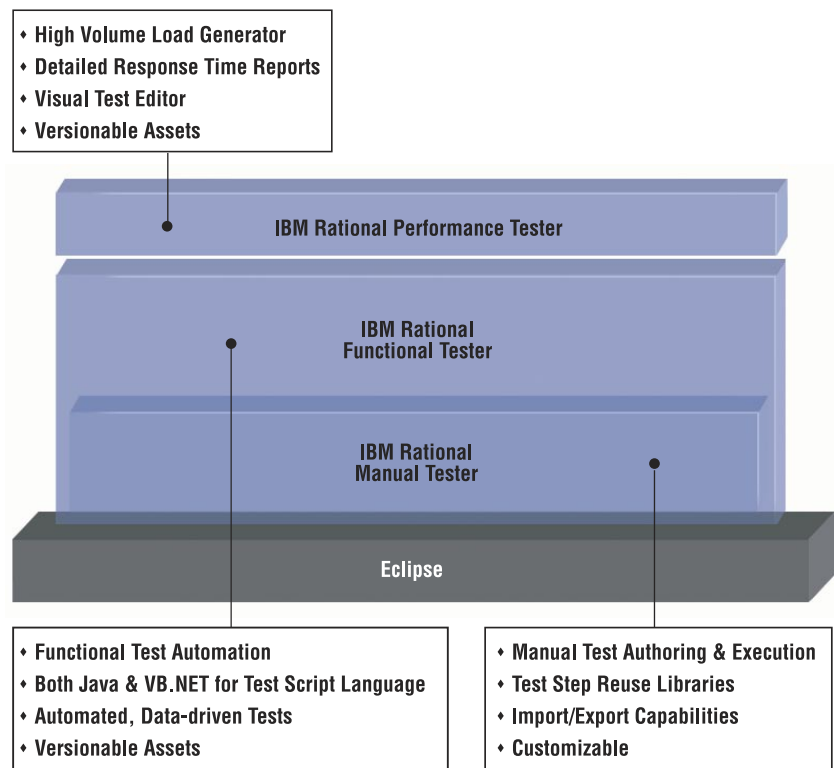
- High Volume Load Generator
- Detailed Response Time Reports
- Visual Test Editor
- Versionable Assets

IBM Rational Performance Tester

**IBM Rational
Functional Tester**

**IBM Rational
Manual Tester**

Eclipse

- Functional Test Automation
- Both Java & VB.NET for Test Script Language
- Automated, Data-driven Tests
- Versionable Assets

- Manual Test Authoring & Execution
- Test Step Reuse Libraries
- Import/Export Capabilities
- Customizable

Figure 3. IBM Rational Professional Bundle: Software Quality Tools

IBM Rational Manual Tester helps teams overcome the disorganization and unintended errors that can prohibit effective manual testing. Using a full-featured Windows- and Linux-based test editor, testers can create well-documented scripts supplemented with images, files, and custom data. A drag-and-drop reuse library vastly simplifies test maintenance in the face of application changes; updates to any one instance of test step blocks shared across multiple scripts and all other instances update automatically. Usage of Rational Manual Tester is intended for business analysts and professional testers working without test automation or with highly variable application interfaces and business processes.

IBM Rational Functional Tester, formerly known as IBM Rational XDE™ Tester, enables functional test automation—the classic QA technique proven to increase the speed, breadth, and depth of testing efforts. This tool enables you to create tests on both the Windows and Linux platforms, execute hands-free interaction with graphical user interfaces and underlying APIs, and probe for both functional and non-functional errors. For testing .NET applications, it helps teams automate the validation of .NET WinForm, WebForm, and Web services functionality and scalability—including an advanced Visual Studio .NET-based functional testing tool that uses Visual Basic .NET as the test script language.

IBM Rational Performance Tester is designed to help teams ensure the scalability of complex Web-based applications before deployment. Rational Performance Tester generates large, concurrent, multi-user loads based on easily generated tests, and then collates and graphically displays system response times. With this information, performance testers can expose system-level bottlenecks, ensuring that poor-performing but high-priority business processes are optimized before deployment.

Testing teams in many organizations still use many manual processes. As a result, organizations need to allocate large chunks of their budgets—both time and money—to testing. With all these IBM Rational software quality products, development teams can now automate many time-consuming and tedious activities, helping them to do more testing in less time.

*Using the Rational Team Unifying
Platform across the lifecycle of
application development can help you
capture, prioritize, and track activities
as well as manage all your
development assets.*

The IBM Rational Team Unifying Platform integration

The IBM Rational Team Unifying Platform™ product suite provides your team with the integrated infrastructure, tools, and processes it needs to collaborate on delivering software-based solutions. As the core foundation of the IBM Rational Software Development Platform, TUP links your business requirements with your development objectives to help you accelerate your software development capability.

The Rational Team Unifying Platform not only streamlines communication, it also helps to enforce processes so that you can maintain project momentum and focus. It simplifies and automates change management so individuals and teams can quickly see the impact of change. Using the Rational Team Unifying Platform across the lifecycle of application development can help you capture, prioritize, and track activities as well as manage all your development assets. Whether your team is co-located or globally distributed, you can combine the benefits of small team collaboration with the ability to leverage key talent across the enterprise.

The IBM Rational Team Unifying Platform has a single installation and license experience that includes:
• IBM Rational RequisitePro: Integrated requirements management
• IBM Rational ProjectConsole: Project measurement and dashboard
• IBM Rational ClearCase LT: Version control with distributed team support
• IBM Rational ClearQuest®: Change tracking, traceability, and workflow
• IBM Rational TestManager: Integrated test management
• IBM Rational SoDA®: Project documentation management
• IBM Rational Unified Process®: Context-specific process guidance

*Complete software asset
management for midsize
to large development teams.*

The IBM Rational ClearCase integration
IBM Rational ClearCase products provide an extensive range of software asset management capabilities. From IBM Rational ClearCase LT to IBM Rational ClearCase to IBM Rational ClearCase MultiSite® change management solutions, organizations can choose the Rational ClearCase product that best meets their development needs.

Rational ClearCase provides complete software asset management for midsize to large development teams. It extends the value of Rational ClearCase LT by adding:

•   Flexible workspace management using dynamic or snapshot views. Dynamic views provide global, transparent access to virtually any version of any element—a feature ideal for an audited build environment or a complex project that requires instantaneous updates to evolving source files. Snapshot views provide a point-in-time copy of elements, which is ideally suited for disconnected usage.

•   Advanced build management to automatically produce a detailed bill of materials, re-create any previous build at any time, and provide build avoidance capabilities so developers do not spend time building files that have already been built by another developer.

•   Support for multiple repository server deployments for large-scale enterprise teams.

•   Mainframe development support, including IBM OS/390® and IBM eServer zSeries® platforms running SUSE LINUX operating systems.

•   Seamless addition of Rational ClearCase MultiSite that enables parallel development across geographically distributed environments.

Rational ClearCase and Rational ClearQuest are integrated with Rational Web Developer for WebSphere Software, Rational Application Developer for WebSphere Software, and Rational Software Architect. From within these products, developers can directly access Rational ClearCase and Rational ClearQuest functions that are exposed through product perspectives, views, menus, toolbars, and context-sensitive pop-up menus. This can allow developers to interact with Rational ClearCase and Rational ClearQuest in the same way they interact with their IDEs. It also can enable developers to efficiently support collaborative development with a common user model. Additionally, the Rational ClearCase and Rational ClearQuest integrations can provide several operations to help streamline and automate common tasks, further improving developer productivity.

Automate software development by integrating development activities into a unified whole.

An integral part of the IBM Rational Software Development Platform

The IBM Rational Professional Bundle is an integral component of the IBM Rational Software Development Platform, a complete, open, modular, integrated, and proven solution. The IBM Rational Software Development Platform is a portfolio of tools that crosses all roles and supports all disciplines that are involved in software development. It automates software development by integrating disconnected development activities into a unified whole, with a common toolset, vocabulary, and workflow that all team members can share.

Test drive the Rational Professional Bundle

You can test drive the products in the IBM Rational Professional Bundle at ibm.com/developerWorks/downloads. You can download IBM software or request a complimentary developerWorks® Software Evaluation Kit DVD. At the Web site, you have the choice of downloading the individual products in the Professional Bundle or requesting a complimentary developerWorks Software Evaluation Kit DVD, which also includes trial code from IBM DB2®, Lotus®, Rational, Tivoli®, and WebSphere®.

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Conclusion: The Rational Professional Bundle provides business value

With the IBM Rational Professional Bundle's development assistance, developers can easily see the actual business value that they derive from using the IBM Rational Software Development Platform. Developers increase their productivity and improve the quality of their software through a single unifying workbench that has various well-integrated development tools. The Professional Bundle can help lower development and operations costs as well, since the unified workbench reduces administration costs, facilitates skills transfer, and reduces user product training needs. And the open-source-based, extensible development platform provides even more advantages by reducing vendor lock-in and granting extensibility without vendor dependency.

For more information on the IBM Rational Professional Bundle as well as the IBM Rational Software Development Platform, please see:

- http://www.ibm.com/software/awdtools/probundle
- http://www.ibm.com/software/info/developer

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