IBM

Rational software

IBM Rational Functional Tester

Highlights

- **Robust testing support for Java®, Web, and Microsoft® Visual Studio® .NET WinForm-based applications**

- **Choice of language—Java or Visual Basic .NET®—for test script customization**

- **Native Java and VB.NET editor and debugger for advanced testers**

- **ScriptAssure technology to accommodate frequent UI modifications**

- **Automated data correlation and data-driven testing designed to eliminate need for manual coding**

- **Multiple verification points with regular expression pattern matching support**

- **Advanced object map maintenance capabilities**

- **Linux test editing and test execution support**

- **Version control ready**

- **Add-on support available for testing 3270/5250 terminal-based applications**

- **Ships with copies of IBM Rational Manual Tester and IBM Rational ClearCaseLT**

One of the questions most often asked during the software development lifecycle is, "How are we doing?" In other words, what percentage of the application's requirements have been implemented, what percentage of those requirements have been implemented successfully and how far from project plan estimates has the development effort strayed? To answer these key questions, teams perform functional testing. Typically the domain of QA departments, functional testing concerns itself with verifying the successful implementation of requirements in categories such as functionality, usability, appearance and many others.

Though functional testing can be performed using a purely manual approach, automation brings great benefits to the organization:
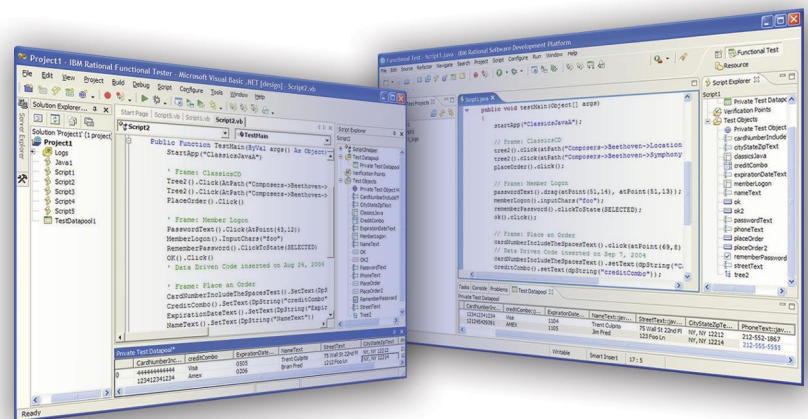

Figure 1. IBM Rational Functional Tester is an advanced, automated functional and regression testing tool for testers and GUI developers who need superior control for testing software applications. Complex tasks are simplified for the novice tester while experts can use their choice of test script language - Java or VB.NET - to add unlimited customization.

- *Makes regression testing—testing for feature regression from one build to the next—possible without tying up tester resources*
- *Frees QA from maintaining and executing basic tests, encouraging the creation of additional, thorough tests*
- *Automates non-testing activities such as test lab machine preparation and database configuration*
- *Reduces human error that can occur during activities such as test step execution and recording of test results.*

IBM® Rational® Functional Tester enables the automation of functional and regression testing. Possessing a deep understanding of Java, Web and VS.NET WinForm-based UI technologies, Functional Tester combines a robust recorder of user actions with multiple customization options and intelligent script maintenance capabilities to ensure a test creation and execution process resilient in the face of application change. Accessible to novice and expert alike, Functional Tester is suitable for testers, GUI developers and anyone else on the project team responsible for answering the question, "How are we doing?"

Lowering Cost of Functional Testing
The benefits of automated testing are quickly lost when teams must expend a lot of manual effort to keep test scripts up-to-date throughout the project. Functional Tester uses an advanced technology named ScriptAssure to "learn" UI control characteristics, thereby identifying the same controls in newer builds despite underlying changes. These characteristics are stored in an object map that can be

shared across scripts and across projects. With this map, changes to object recognition characteristics in the map affect all test scripts, simplifying maintenance. And new, advanced object map search and filter capabilities have made maintenance even easier.

New to this version of Functional Tester is an automated data correlation capability. This feature lets teams enable their test scripts for data-driven testing—varying input data during a test run—without having to change the code manually. And a new datapool editor uses a spreadsheet-like interface to model and then store the variable test data that will be used during test execution.

Verification points inserted within test code—used to compare actual data with expected data— supports the usage of regular expressions to accommodate data variability, such as when comparing fragments of complex strings. This capability further reduces the need for test maintenance activities to accommodate changes in the application(s) under test.

Unlimited customization potential
Teams quickly learn that test script modification and enhancement is inevitable. Everything from simple looping constructs to advanced file manipulation or operating system interaction may be necessary to get the most out of an automated testing tool. Functional Tester offers an unprecedented choice to its users in recognition of this need—the choice of mainstream, industrial strength languages hosted within equivalently robust test editors and debuggers.

Functional Tester can produce test scripts using either 100% Java hosted within the Eclipse Java Developer Toolkit editor or using 100% VB.NET hosted within the VS.NET editor. Anyone familiar with these programming languages can quickly modify existing code as well as create custom libraries that can be called by other test scripts. Coding is greatly simplified thanks to the Eclipse and VS.NET editors, both of which provide advanced editing features such as automated code completion and advanced debugging options. Customization possibilities are limitless and communication of test scripts with development is vastly simplified. In fact, GUI developers and other members of the development team can access Functional Tester from within their Eclipse or VS. NET-based IDE's to create their own tests. Examples of Eclipse based IDEs are IBM Rational Software Architect and IBM Rational Application Developer for WebSphere Software.

Supporting diverse team needs
As teams take advantage of Functional Tester's advanced scripting capabilities, the need to store multiple versions of a test script becomes important. Add to this the additional complication of supporting geographically distributed test teams and the need for multi-site parallel development becomes clear. Functional Tester supports the use of parallel development, enabling the version control of test scripts. Colocated teams can use the IBM Rational ClearCaseLT product that ships in the box with Functional Tester, upgrading to the full IBM Rational ClearCase solution for work with geographically dispersed teams.

Built on open standards

The Java scripting capabilities of Rational Functional Tester are built upon the Eclipse architectural framework and its test, trace and monitoring extension, named Hyades. Both are open source projects that provide shared, open source services across tooling environments that target application development, testing, deployment and monitoring. Usage of this infrastructure can promote benefits ranging from the elimination of proprietary datastore formats to enabling support for both internal and third-party customization and contribution. An investment in tools based on Eclipse and Hyades can help avoid vendor lock-in and is designed to encourage future innovation.

Integral part of the IBM Software Development Platform

IBM Rational Functional Tester is an integral component of the IBM Software Development Platform. The IBM Software Development Platform is the industry's most complete and powerful solution for software system creation and application lifecycle management. It provides automation support for essentially all aspects of software development. Further it unites team members by enabling them to share information effectively with each other and between their tools.

Integration into the Software Development Platform is designed to ensure access to various software development lifecycle assets such as application requirements and enables a shared user experience across team disciplines. From the perspective of functional testing, this ensures the ability of developers and testers to build, share and analyze functional tests from within the same user interface they use to construct, test, deploy and monitor their applications using other tools with the Software Development Platform.

Component of the IBM Rational Professional Bundle

IBM Rational Functional Tester is included in IBM Rational Professional Bundle, comprised of all the desktop tools an enterprise needs to design, construct, and test J2EE/Portal/ Service-oriented applications, in a single purchase vehicle with one maintenance contract to manage.

IBM Rational Services

A variety of service offerings are available to complement IBM Rational tools and best practices to help you build that's right for your business. Our services are designed to help you build team skills, reduce the time to productivity when implementing a new solution, and to maximize the return on your investment in IBM Rational tools.

- *IBM developerWorks: Rational is the technical resource for the community of development professionals using or evaluating IBM Rational tools and best practices. developerWorks: Rational offers a variety of downloads, resources, discussion groups, and education designed to help you utilize IBM Rational solutions to best advantage.*
- *IBM Rational software training offers a curriculum that includes courses covering all the software development capabilities. A blended curriculum of instructor-led and Web-based training provides a variety of options to suit your organization's education needs*

- *The IBM Rational worldwide staff of professional services consultants bring years of experience to help you lay a solid foundation for successful software development projects. You can engage Rational professional services on large-scale customized consulting projects that are tailored to meet your organization's unique needs, or you can engage your local account team for short-term assistance with a single challenge. Several types of "packaged" services are also available, including offerings that provide an objective assessment of your software development capabilities, deploy a new tool or methodology, or help you produce tangible assets through a facilitated workshop.*
- *IBM Rational Customer Support helps ensure that your project keeps moving forward with the help you need, when you need it. These maintenance programs offer efficient problem resolution with both online access to tens of thousands of technical notes, patches, and upgrades, as well as direct access to a talented team of support engineers. IBM Software Maintenance is the standard maintenance offering, and Technical Support Account Services can supplement this, according to your business requirements*

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 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.

IBM Rational Functional Tester hardware and software requirements

- Operating System for Recorder and Editor:
  - Windows® 2000 Professional
  - Windows XP Professional
  - Windows 2003 Server
  - Red Hat® Linux® version 9.0 (All functions except recording)
  - SUSE® Linux Enterprise Server 9.0 (All functions except recording)

- Operating System for Test Execution:
  - Windows NT4 (latest SP/SRP only)
  - Windows 2000 Professional
  - Windows XP Professional
  - Windows 2003 Server
  - Red Hat Linux versions 8 and 9
  - Red Hat Enterprise Linux
  - Windows 2003 Server Workstation version 3.0
  - SUSE Linux Enterprise Server 9.0

- Processor
  - 500 MHz Intel© Pentium© III
  - Recommend: 1.4+ GHz Intel Pentium 4

- Available RAM
  - Minimum: 512 MB
  - Recommend: 1 GB

- Available Disk Space
  - 1 GB installation directory per product