

Unify development and testing with IBM Rational ClearQuest software

White paper

October 2006



Rational software

**Streamline and speed the delivery of
high-quality software applications.**

Contents

2 Introduction

2 *The challenges of today's development and testing environments*

4 *Unifying development and testing*

5 *Creation of an integrated view of a project*

6 *Enforcement of testing processes*

6 *Coordination of distributed teams*

7 *Integration with test automation tools*

7 *Gaining long-term benefits*

7 *Conclusion*

Introduction

In many companies today, software development and testing activities are disconnected. Most developers and testers lack the tools that would enable them to collaborate on inherently connected processes. This lack of integration can adversely affect the quality and reliability of the software products being designed, as well as significantly increase the time and effort required to bring these products into the marketplace. Compounding this problem is the fact that many companies have distributed development environments that cannot provide a consolidated and manageable view of the interlinked development and testing activities.

To address these challenges, companies are looking for solutions that enable them to unify their development and testing activities. They need to customize and enforce development and testing processes, achieve an integrated view of their distributed development and testing efforts, meet internal and external compliance requirements, and reduce the overall cost and time of delivering quality software.

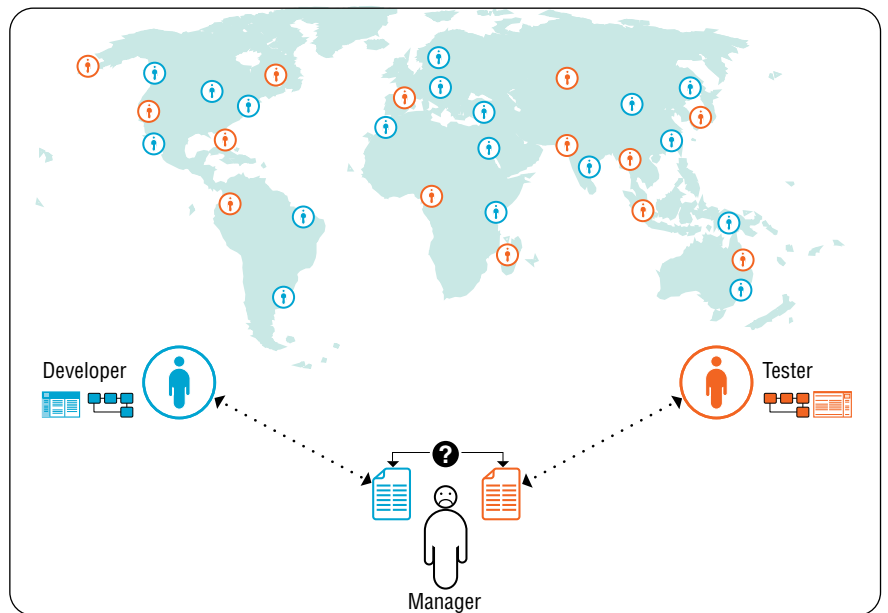
This paper describes the key challenges that companies are facing today. It then discusses how IBM Rational® ClearQuest® change management software addresses these challenges to help project teams obtain a consolidated, real-time view of their development and testing processes, customize and enforce testing processes and workflows, and seamlessly coordinate work across distributed locations.

The challenges of today's development and testing environments

Historically, large companies have implemented disparate systems – as well as disparate processes and procedures – that support the development and testing of their applications. This can create serious coordination problems between development and testing teams that are working with their own set of information that cannot be easily shared. When development and testing activities are managed separately, it is difficult for teams to work together efficiently, and it is nearly impossible to see a complete view across the entire project. Additionally, traceability between development, testing and other project assets is difficult, at best.

While different regulations and mandates place different requirements on development teams, all require development and testing organizations to implement and maintain reliable, repeatable, enforceable processes. Unfortunately, many companies lack the systems and tools to effectively define and enforce their development, testing and approval processes across the software lifecycle. Because processes and business requirements change over time, disconnected legacy systems make it difficult for companies to modify and customize these processes across the organization quickly, easily and cost-effectively.

In addition, companies often have distributed development environments that support a 24x7 application development lifecycle. Development and testing activities may occur onsite, offsite, nearshore or offshore. They may be co-sourced or outsourced. Having multiple development and testing teams geographically dispersed across the world can negatively impact a company's ability to adhere to consistent processes and make the best use of its personnel and IT resources. At the same time, these distributed environments often make it difficult for teams to communicate and collaborate effectively. And the ability to manage and support distributed development and testing teams working in multiple locations can become overwhelming—driving up costs, reducing quality and prolonging project schedules.



Disconnected development and testing teams can negatively impact overall communication and visibility across a project.

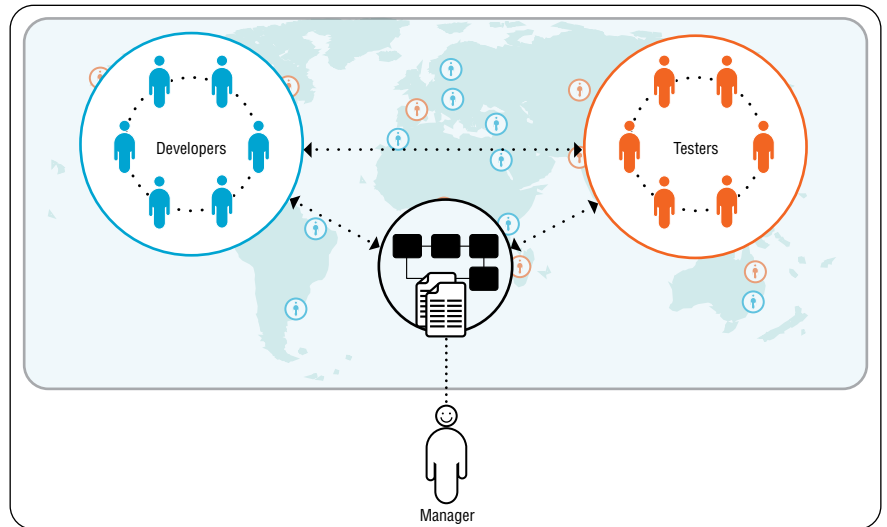
Unifying development and testing

Rational ClearQuest software is a powerful workflow management system designed to help you effectively manage the full software lifecycle, from requirements definition through application deployment. By unifying life-cycle processes, Rational ClearQuest software can close the gap between development and testing activities, and help improve the delivery time and cost of high-quality software applications.

Insight and visibility are improved with real-time status and reporting features. Defect and change tracking capabilities manage issues throughout the project lifecycle. Workflows control and enforce development and testing processes while allowing team members to coordinate their work effortlessly. Supporting multiple approaches to distributed development, Rational ClearQuest software is ideal for teams that span geographic locations.

Rational ClearQuest software manages the full range of testing activities from test planning, to test execution, to the capture and analysis of test results. Test plans can be defined. Test cases can be created and associated with specific test plans. Test execution scripts authored in a variety of test automation tools – from IBM, open source providers or third-party vendors – can be associated with these test cases and executed. Rational ClearQuest software captures the test results, which can then be easily summarized in a chart or report and analyzed.

Through the creation of an integrated project view, enforcement of development and testing processes, and coordination of distributed teams, Rational ClearQuest software can help improve overall project visibility, enhance communication and coordination across workgroups, and help you maximize the talents of your available resources. The end result can be more efficient project execution, shorter project schedules and reduced costs.



Rational ClearQuest software unifies development and testing for improved project visibility, process enforcement and coordination of distributed teams.

Creation of an integrated view of a project

Rational ClearQuest software provides development and testing teams with a single solution to manage tests, defects and project change. This enables an integrated, consolidated view of development and testing activities, a single reporting solution for all development metrics and reports, and centralized user management. You can more thoroughly assess the quality of a software application as it is being tested, quickly determine the overall status of a project, and make more informed decisions.

Using a secure, centralized repository, Rational ClearQuest software provides a traceable, auditable relationship between development, testing and project information. By linking requirements, code, build records, test cases, test results, deployment records and other development assets, you can determine what requirements were implemented, what code was updated, which test cases were run, what the test results were, and when the application was deployed.

Additionally, Rational ClearQuest software provides user authentication, user authorization and electronic signatures to deliver the access control and audit support needed to help meet compliance mandates.

By providing a single project view and centralized user management, Rational ClearQuest software can improve team communication, team coordination and project visibility, and help ensure that issues are documented and managed to resolution.

Enforcement of testing processes

Rational ClearQuest software helps organizations create repeatable, enforceable, predictable processes. Organizations can jump-start their implementations with out-of-the-box workflows. Workflows can be easily customized to meet specific team needs. States and actions can be defined, fields can be added and lists can be modified. Mandatory fields help ensure that the right data is collected as part of the process, while e-mail notifications keep team members informed of any changes or updates.

An important component of any project is the ability to ensure compliance with project and company policies and standards. Rational ClearQuest software enables organizations to define and enforce how test cases move throughout the lifecycle, and to trace the origin and details of all activities during the application development and testing processes. Rational ClearQuest software helps enable organizations to verify and document changes that take place, when and why they take place, and who is authorizing and signing off on those changes at key stages in the application lifecycle.

By providing better control and enforcement of development and testing processes, Rational ClearQuest software helps make sure nothing falls through the cracks, reducing overall project risk.

Coordination of distributed teams

Rational ClearQuest software enables organizations to better manage their geographically distributed projects and more effectively leverage the talent they have, no matter where that talent is located.

Rational ClearQuest software provides a range of access capabilities that enables team members virtually anywhere to work with the most up-to-date information available. Remote access to a centralized repository is provided through Web clients. And IBM Rational ClearQuest MultiSite software delivers automatic replication and synchronization of repositories between geographically distributed sites.

Communication and coordination are enhanced by enabling development and testing teams to share the latest test plans, test cases and test results. Projects that span locations and time zones can be managed more effectively through comprehensive metrics and reports. Whether teams are colocated, distributed

or outsourced, Rational ClearQuest software provides the flexibility and scalability required to support enterprise-wide development and testing needs. This allows teams to realize the cost benefits of leveraging distributed and outsourced resources while mitigating communication and coordination risks.

Integration with test automation tools

Rational ClearQuest software provides an extensible test management environment. It can tightly integrate with IBM Rational test tools, including the IBM Rational Manual Tester, IBM Rational Functional Tester, IBM Rational Functional Tester Extension for Terminal-based Applications, and IBM Rational Performance Tester tools. Rational ClearQuest software can also integrate with open source and third-party test automation tools. This broad range of integrations provides flexibility and simplifies the management of tools from multiple vendors.

Gaining long-term benefits

Through the use of Rational ClearQuest software, historically separated development and test groups can now work as a single team and achieve long-term benefits that may include the ability to:

- *Increase the speed and efficiency of delivering high-quality applications.*
- *Enhance communication and collaboration across workgroups.*
- *Reduce project costs and maximize the talents of available resources.*
- *Improve visibility into all aspects of application development.*
- *Comply with policies and standards and address internal audits.*

Conclusion

Competitive pressures are placing increased demands on companies to develop and deploy applications as quickly and cost-effectively as possible. However, the lack of integration between development and testing activities can increase the time, effort and cost it takes to bring an application into the marketplace.

Rational ClearQuest software is designed to help companies address these challenges. By providing a single view across the project, delivering process control and enforcement, and enabling global coordination, IBM Rational ClearQuest software can help improve team communication and speed the delivery of high-quality software applications.



For more information

To learn how IBM Rational ClearQuest software can help unify development and testing visit:

ibm.com/software/rational/offerings/scm.html

© Copyright IBM Corporation 2006

IBM Corporation
Software Group
Route 100
Somers, NY 10589
U.S.A.

Produced in the United States of America
09-06
All Rights Reserved

IBM, the IBM logo, Rational and ClearQuest are trademarks or registered trademarks of International Business Machines Corporation in the United States, other countries or both.

Other company, product and service names may be the trademarks or service marks of others.

The information contained in this documentation is provided for informational purposes only. While efforts were made to verify the completeness and accuracy of the information contained in this documentation, it is provided "as is" without warranty of any kind, express or implied. In addition, this information is based on IBM's current product plans and strategy, which are subject to change by IBM without notice. IBM shall not be responsible for any damages arising out of the use of, or otherwise related to, this documentation or any other documentation. Nothing contained in this documentation is intended to, nor shall have the effect of, creating any warranties or representations from IBM (or its suppliers or licensors), or altering the terms and conditions of the applicable license agreement governing the use of IBM software.