



Highlights

- Track quality-driven software and systems delivery using a comprehensive and customizable test plan
 - Capture test cases and link them with requirements, defects, development work items and builds
 - Facilitate collaboration between distributed test teams with a Web 2.0 interface
 - Author and execute manual test scripts or launch automated test execution tools
 - Provide up-to-date project quality status tailored to the individual using customizable dashboards
 - Track, schedule and execute tests on physical and virtual lab assets with test lab management capabilities
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IBM Rational Quality Manager

Collaborate, automate and govern to achieve quality-driven delivery

Business success often depends on a sole factor: the quality of the product being sold. This is evident in the software and systems market, too. Large sums of money, the success of your organization and other factors depend on how well and consistently you get complex software and systems right.

Quality issues can affect software and systems development in a number of areas:

- Difficulties in product and application development and delivery that cause missed deadlines
- Release dates and budget overruns caused by miscommunication, inefficient processes, scope changes, defects and excessive rework
- Operational and in-service costs because of unplanned fixes, updates, recalls, warranty claims and at the extreme, litigation

Avoiding these issues requires a quality management methodology that is built into every step in the software and systems development lifecycle.

Quality-driven software and systems delivery extends traditional testing to include requirements definition and management to defect management so that quality is part of the entire development lifecycle. To make quality part of the lifecycle teams need to collaborate, use automation to accelerate project delivery, share information and collect metrics to better govern projects.



IBM® Rational® Quality Manager software, a web-based centralized test management environment for business, system and IT decision makers and quality professionals, is designed to provide tools that help support quality-driven software and systems delivery. It is a collaborative and customizable solution for test planning, workflow control, tracking and metrics reporting that helps teams quantify how project decisions and deliverables impact and align with business objectives.

People, not organizations, build great software and systems

Quality-driven software and systems delivery expands the definition of quality beyond the boundaries of traditional testing to include other key aspects—from requirements definition and management to defect management. To add quality to these aspects, teams need to:

- **Collaborate.** Sharing project information and status updates is critical so that team members can synchronize teamwork throughout the lifecycle.
- **Automate.** Reducing labor-intensive, manual activities helps speed time to delivery.
- **Govern.** On-demand and real-time project metrics are necessary for accurate, reliable and timely release decisions.

IBM Rational Quality Manager software, a core component of the IBM Rational solution for Collaborative Lifecycle Management, can help you:

- Establish a collaborative, role-based, business-driven environment for test planning and execution, workflow control, tracking and metrics reporting.
- Enable teams to quantify how project decisions and deliverables affect and align with business objectives and outcomes.
- Synchronize your team's efforts, helping reduce defects and accelerate product delivery schedules.



Figure 1: IBM Rational Quality Manager software users can customize the layout and content of their dashboards to provide tailored information for individual decision making.

The Rational solution for Collaborative Lifecycle Management

The Rational solution for Collaborative Lifecycle Management is ready-to-run Application Lifecycle Management (ALM) software based on IBM Jazz™ technology. The solution is designed to help organizations coordinate their software development activities from business needs to system delivery. The Rational solution for Collaborative Lifecycle Management helps meet the five ALM imperatives: real-time planning, lifecycle traceability, in-context collaboration, development intelligence and continuous process improvement. IBM Rational Quality Manager software, IBM Rational Requirements Composer software and IBM Rational Team Concert™ software are the three core components of the IBM Rational solution for Collaborative Lifecycle Management.

Collaborate

People don't build great software and systems alone; they do it in teams. Getting individuals to work as a team to collaborate is critical to enabling quality-driven software and systems delivery. Rational Quality Manager software helps facilitate collaboration with a dynamic test plan, distributed access for teams of any size and team visibility.

The test plan

A test plan should be more than just a document created at the beginning of a project. Instead, a test plan should be a quality contract that provides documentation on project objectives and the steps required to achieve them, and the plan should align with requirements and development plans.

With IBM Rational Quality Manager software, a test plan is a dynamic document that evolves with the project. It clearly describes project goals and entry and exit criteria, while tracking prioritized items for validation. Static data, such as business objectives, and dynamic data, such as requirements and test cases are captured in the plan. Each section of a Rational Quality Manager test plan can have individual owners establishing clear responsibilities for the entire software quality team.

Distributed access for teams of all sizes

Modern software and systems teams rarely work out of a single location. In fact, they are usually spread across different buildings, cities and even countries. Helping these teams communicate seamlessly and efficiently can pose a significant challenge.

Rational Quality Manager software is built on a Java and Web 2.0 technology-based architecture and it doesn't require complex installation or proprietary and limiting technologies. So team collaboration is as simple as opening a web browser.

Team visibility

To work together effectively, team members must understand what is expected of them and what they can expect from others. Rational Quality Manager software includes dashboards for individual users to help make information immediately accessible to all team members in the context of their work. For example, a work-item list can show a tester what work has been assigned to him or her, and a team event log updates automatically as activities occur and progress. Rational Quality Manager software is also designed to record discussions and chats about the work being done, providing appropriate data for technical and business decisions.

Automate

Automation can accelerate quality-driven delivery. Rational Quality Manager software is designed to automate many testing tasks, including manual test authoring, risk-based testing, test coverage optimization and test lab management.

Manual test authoring

Manual testing is a large component of quality assurance. Documenting tests, ensuring consistent execution and capturing test results, though time-consuming, are necessary processes. IBM acknowledges the importance of manual testing and has helped integrate manual test authoring directly into Rational Quality Manager software. Testers are provided with a rich text editor that can capture textual test steps alongside embedded images. Using this editor, testers can record the test steps that must be executed to validate a given function of their application.

To enable test reuse, Rational Quality Manager can provide keywords that testers can use to share common steps between tests. These can be manual steps or automated test scripts that are powered, for example, by IBM Rational Functional Tester software. Creating hybrid manual tests with automated keywords is a simple way for manually focused test teams to take advantage of the power of test automation without making a full commitment to a test automation framework.

Software test teams that work with web-based or Java software applications can accelerate the creation of manual test scripts with the recording capabilities of IBM Rational Functional Tester software integrated with Rational Quality Manager software. The tester's interactions with the application being tested are automatically captured as an English manual test script with screen captures.

Risk-based testing

Teams often struggle to find the time to execute all the regression tests that have been created, especially in the context of iterative or agile development processes. Being able to find the right set of test cases to execute that can help ensure optimal quality despite time and cost constraints becomes critical to successful software and systems development projects.

Rational Quality Manager software helps teams make informed decisions, establish priorities and effectively focus testing efforts on areas of the application or system that are at the highest risk of failure. With community risk ratings, you can adjust your projection of risk using the most up-to-date insight from your project contributors.

Test coverage optimization

Many applications or systems are built to support multiple environments. Such environments can be composed of different operating systems, different browsers or different hardware configurations. For testers, this poses a significant challenge, because the time required to complete testing increases significantly with the number of supported configurations.

Rational Quality Manager software is designed to automate the identification and selection of the minimum number of tests required for a given level of environment coverage. As a result, testers can optimize configuration coverage within their time or resource constraints.

Test lab management

Given the enormous number of configuration possibilities, testers often spread test execution over a lab of physical and virtual machines. However, ensuring the availability of these machines and scheduling tests for them can be extremely difficult.

IBM Rational Quality Manager software helps support distributed execution over physical and virtual lab machines with test lab management functionality. Testers can register their physical and virtual assets and schedule execution according to asset configuration. Registering and scheduling simplify administration and help ensure optimal utilization of test lab resources.

Govern

Quality-driven software and systems delivery requires the collection of metrics for better governance. The trajectory of teams—working together and benefiting from the power of automation—is measured by team project statistics, and this information is used as the basis for release decisions. Rational Quality Manager software includes functions for development intelligence and lifecycle traceability, two critical governance components.

Development intelligence

The challenge of project governance lies in providing the right level of reporting for each individual on the team. Even though the needs of project managers differ greatly from those of testers, the requirements of both should be met for a project to succeed. Rational Quality Manager software is designed to provide contextual information tailored to the individual. Each user can customize the layout and content of his or her Rational Quality Manager dashboard. Because the dashboard is continually updated, each user can view the latest work-related information.

A wide variety of formal and customizable reports are also available. Reports can capture information at varying levels of detail to help ensure that all team members have access to the information they need.

Lifecycle traceability

Ensuring that an application or system meets its business objectives requires more than running a few tests. It requires delivery teams to track requirements, associate those requirements to test cases and report any defects found during test execution.

Rational Quality Manager software is designed to enable full lifecycle versioning and traceability from requirements and tests to defects and remediation. Users can create text requirements directly in Rational Quality Manager or they can use a dynamic link to requirements management tools such as IBM Rational Requirements Composer software or IBM Rational DOORS® software. Test cases can then be linked to requirements,

providing project managers with a way to track requirements coverage. Should any issues be found during test execution, defects can be entered and tracked to help ensure proper feature development.

Conclusion: Quality-driven delivery

IBM Rational Quality Manager software can help teams collaborate with tools designed for sharing information, automation for accelerating project schedules and metrics collection for project governance and release decisions. By using IBM Rational Quality Manager software to implement quality-driven software and systems delivery, teams can help ensure that their applications meet intended business objectives.

For more information

To learn more about Rational Quality Manager, please contact your IBM marketing representative or IBM Business Partner, or visit the following website:
ibm.com/software/rational/products/rqm

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