



**Rational** software

## **Expanding the value of IBM Rational Team Concert software with IBM Business Partners.**

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**Transforming the way software is created and deployed**

The sheer complexity of emerging business models is putting new pressure on development teams. Shifts in globalization patterns, distributed teams and technology-enabled ways of working such as Web 2.0 are changing the expectations of employees, managers, partners, customers, communities and companies. Many development organizations are finding it difficult to keep pace with these changes.

It's ironic that the very organization tasked with supporting business automation and innovation is often hampered by antiquated practices. Team members from managers to practitioners are speaking out: "There's no visibility into my projects; it takes too long to get answers from the team." "We can't keep up with open source and software licensing obligations across multiple projects." "Each development tool comes with its own repository, making it difficult to connect and trace items and assets in a meaningful way." "Collaboration consists of only brittle point integrations and isn't scalable."

To address these and similar concerns, IBM envisioned a technology with the potential to radically change how business software is created and deployed. That vision is realized in IBM Jazz™ technology, a foundation for transforming how people work together to develop and deliver software, and in Rational Team Concert, the first product based on Jazz technology.

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## Highlights

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***The number of stakeholders involved in software delivery has increased well beyond programmers and their managers. And these stakeholders can be scattered across locations and organizational boundaries.***

This white paper highlights the current challenges in software and systems delivery and how IBM Rational Team Concert helps teams meet these challenges by allowing them to collaborate more effectively in the context of their current activities. It then describes the rapid, ongoing evolution of the platform with enhancements from the IBM Business Partner ecosystem that offer significant benefits to virtually everyone involved in the software delivery lifecycle.

### **Challenges in software development and delivery**

Ten to 15 years ago, software delivery was pretty simple. Roles were largely limited to programmers and their managers. Most teams were in a single location. Communication and collaboration were straightforward.

Today, the number of roles has expanded to include legal and security officers, analysts, programmers, testers, auditors, project managers and other nontraditional stakeholders. Development team members can be scattered around the globe – and not all of them are employees. Partner organizations, vendors and contractors can participate in the software development process. Each role has its unique perspective, input, information, processes and governance practices.

Analysts are concerned with ensuring alignment of software requirements to business objectives. IT managers want to know: “What are we working on?” “What is the project status?” “How are we delivering compared to plan?” “What is my return on investment?” Project managers are tasked with gathering the data and providing management with answers as quickly as possible.

Developers are asked to create code with the highest possible quality in the shortest amount of time. Testers have to make sure the software works the way it’s supposed to, and auditors are responsible for seeing that industry regulatory compliance mandates and standard practices and procedures are followed.

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**Highlights**

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***Successful software delivery requires that all stakeholders in the process be able to communicate and collaborate with ease—no matter where they are located or what role they play.***

All of these people have to keep up with every issue or change that can affect their activities. For example, teams often adopt open source code to help accelerate and improve software delivery processes. However, the use of such code carries potential risk to the organization. Not all open source code is of high quality. For that reason, many organizations restrict the use to well-defined sources or components. And if the end product is resold, using open source code can invalidate trademark or intellectual property agreements. In these instances, the legal officer needs to validate that corporate policies and procedures are being enforced. This oversight requires visibility across multiple projects to keep up with open source and software licensing obligations. And the security officer needs to monitor what code has been cleared for deployment.

If software is going to be successfully delivered, all stakeholders in the process must be able to effectively collaborate and communicate.

**IBM Rational Team Concert: software innovation through collaboration**

IBM Rational Team Concert is a collaborative software development environment that helps individuals and teams attain peak performance. It is designed to connect dispersed development teams for enhanced individual and team productivity, compressed development cycles and higher-quality software. It provides essential software version control, workspace management and parallel development support to help organizations:

- *Gain realtime visibility into individual and team-related work.*
- *Stay on top of project progress with dashboards that help teams troubleshoot project problems and take corrective action earlier in the software delivery lifecycle.*
- *Accelerate development cycle times with automated and reusable patterns, services and architectures.*
- *Identify defects earlier and fix them more quickly.*
- *Improve predictability of project outcomes.*

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### Highlights

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***IBM Rational Team Concert automatically captures the information associated with each work item, providing the context required for team members to remain in sync and collaborate effectively.***

Rational Team Concert automatically creates and tracks the progress of individual work items in accordance with team process and project rules. This capability allows enhancements, conversations and information about defects to flow efficiently across the team, accelerating project progress. As work advances, Rational Team Concert captures information – such as who, what, when and why – associated with each work item to provide much-needed context when work items are shared among team members. It can help improve productivity by tracking changes to artifacts automatically and enabling rollback to previous versions. And support for approvals and discussions helps ensure that code reviews and approvals take place on schedule and that team members remain in sync.

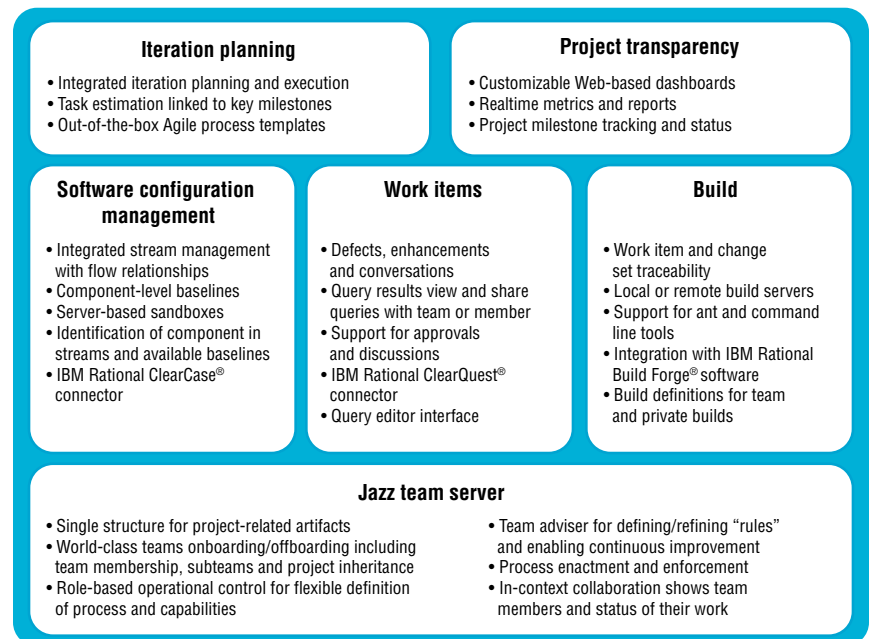


Figure 1: IBM Rational Team Concert provides comprehensive capabilities to improve the productivity and effectiveness of the core software delivery team.

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### Highlights

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***As a Jazz technology-based product, Rational Team Concert delivers collaboration in context by helping organizations provide a rich communications infrastructure and manage the relationships between artifacts.***

Using Rational Team Concert, teams are better able to strike the right balance between experimentation and transparency through combinations of private and public workspaces. Integrated stream management and server-based sandboxes help individuals solve problems in a controlled environment and then easily contribute to the team's regular builds.

**Built on Jazz: a next-generation technology foundation for collaborative software delivery**  
Uniquely attuned to the needs of global teams, Jazz combines an awareness of people, projects and processes with automation to accelerate the software lifecycle and improve project governance. It serves as the foundation for Rational Team Concert and its IBM Business Partner ecosystem integrations.

Jazz technology-based products can deliver collaboration in context by managing the relationships between artifacts and providing a rich communications infrastructure for project teams. With straightforward setup and dynamic provisioning of new team members and projects, organizations can begin improving productivity from day one. This accelerated onboarding capability enables more rapid response to business needs and helps make the best use of business and technical talent wherever it is located. Products based on Jazz can also deliver just the right amount of governance by automatically collecting metrics and producing realtime reports and alerts – virtually eliminating administrative overhead and helping to reduce project risk.

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Highlights

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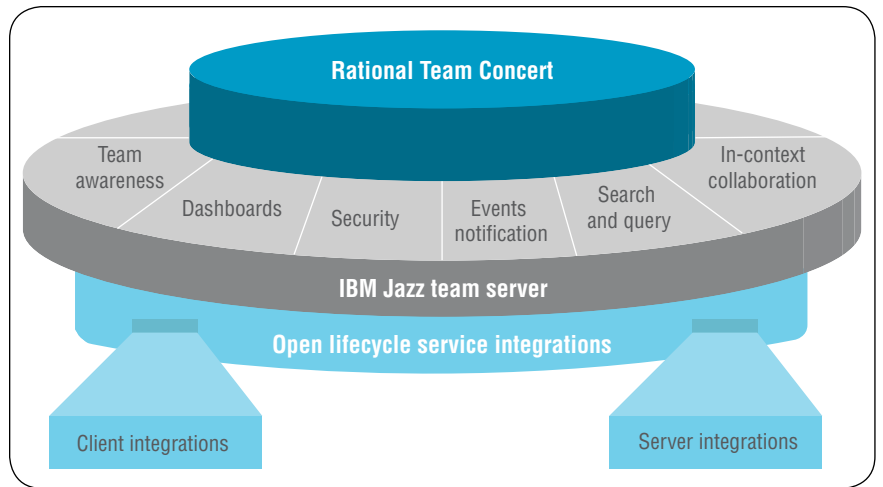


Figure 2: Rational Team Concert leverages a rich set of services from the Jazz team server.

***Because Jazz serves as the technology foundation for Rational Team Concert, software delivery teams are able to use disparate tools but still share resources.***

The Jazz foundation supports a broad range of products from multiple vendors. IBM is working with partners, customers and other vendors to simplify collaboration across the software delivery lifecycle. The goal is to enable teams to use disparate tools but still share resources—whether the tools are from IBM, other vendors, open source projects or in-house development—and to do so in a way that is open and nonproprietary and that encourages all industry members to participate.

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Highlights

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***Rational Team Concert is continually be extended by IBM Business Partners who provide specialized capabilities that help the various stakeholders in the software delivery process produce higher-quality work in less time.***

**Extending and enhancing role collaboration through the IBM Business Partner ecosystem**  
Rational Team Concert is continually being extended by Ready for IBM Rational software Business Partners who provide specialized capabilities and value-added functions. Areas where Jazz has been extended by our Business Partners include:

- *Analysis and reports on software licensing and compliance of source code.*
- *Process mechanisms to transparently automate the governance of service-oriented architecture (SOA) and other business and architectural policies.*
- *Sophisticated statistical process control capabilities to assess how actual project metrics conform to baseline plans.*
- *Metrics and analytics required for lean development of Agile and traditional teams.*
- *Visibility into project and team health for improved application quality.*
- *Automated text transformation and requirements validation to support document-based workflows.*
- *Synchronization of Rational Team Concert with third-party systems for collaboration at the work-item level.*

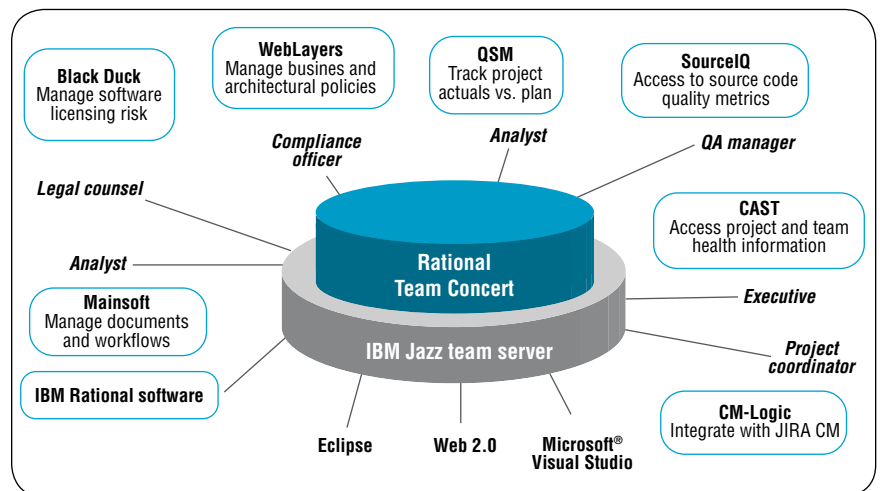


Figure 3: IBM Business Partners provide capabilities that help organizations extend and enhance Rational Team Concert to support a wide variety of roles in the software delivery process.

*Black Duck Software, Inc., provides products and services for accelerating software development through the managed use of open source software.*

Black Duck Software, Inc.: helping to manage use of open source software

The explosion of open source and other code available online makes finding and managing software more complex every day. Developers need to find quality code they can use, and managers and legal counsels need to understand and manage code being brought into the organization. IBM Business Partner Black Duck is an expert on open source reuse and how it should be managed with respect to licensing, security, versions and other policies. The Black Duck Protex product integration with Rational Team Concert can help you manage open source technology, accelerate development and address license compliance.

Facing ambitious deadlines and changing requirements, software developers know that using robust, mature open source code is smarter than starting from scratch. They also understand that open source code reuse should be managed with respect to licensing, security, versions and other policies. However, getting those approvals is slow. Developers want straightforward software reuse policies and streamlined procedures that happen with one click. The integration of the Black Duck Protex product with Rational Team Concert enables this capability with one click. Developers have rapid access to the tools they need to build code more quickly, while lawyers, compliance officers and auditors can be sure policies, procedures and regulations are being followed.

*Organizations on the Rational Team Concert platform can use the WebLayers Center platform to help ensure that work items comply with business, technical and architectural policies—from design through deployment.*

WebLayers: automating policy management and enforcement

WebLayers Center software automates policy management and enforcement for Rational Team Concert. Managers of distributed development teams can be confident that corporate policies and best practices are enforced. As developers begin using Rational Team Concert to create services based on the new Jazz technology, automated governance helps organizations:

- *Mitigate noncompliance risk.*
- *Identify software problems early in the development lifecycle.*
- *Significantly reduce rework.*
- *Improve artifact reuse rates.*
- *Redeploy staff from manual administrative tasks to more valuable and strategic work.*

The WebLayers Center platform provides a policy-based approach to automate what has traditionally been a manual, labor-intensive process of defining and enforcing governance policies. Based on the largest collection of prebuilt policies, WebLayers helps companies begin their governance effort during the design phase of a project, where oversight can have the most impact, and enforce it through deployment to reduce risk and accelerate ROI.

QSM: extending Rational Team Concert built-in planning capabilities

The Quantitative Software Management, Inc. (QSM) SLIM product suite augments the Rational Team Concert planning capability with realistic project estimating and comprehensive what-if analysis. IT managers are able to quickly analyze possible planning alternatives and their associated risk and reliability. The integration of SLIM products with Rational Team Concert also provides sophisticated statistical process control capabilities to assess how actual project metrics conform to baseline plans.

*Established in 1978, QSM offers the SLIM suite of tools that enable organizations to effectively estimate, track and benchmark their software initiatives.*

The QSM SLIM product portfolio includes SLIM-Estimate, SLIM-Control and SLIM-Metrics. SLIM-Estimate is an estimating tool and method based on an extensive historical database with a rich array of management trade-off capabilities. This product allows you to estimate the cost, schedule, effort, size, staff, reliability and risk on software projects. SLIM-Control is the oversight tool used for tracking actual project cost and effort. Together, they provide powerful adaptive forecasting and plan-versus-actual analysis throughout the project lifecycle. SLIM-Metrics offers productivity and quality metrics analysis and benchmarking, simplifying analysis of return on investment, productivity and quality on completed projects.

*SourceIQ Enterprise Server software integrates with Rational Team Concert in a turnkey lean development governance solution for Agile and traditional teams.*

SourceIQ: enabling lean development governance of Agile and traditional teams

SourceIQ Enterprise Server software extends Rational Team Concert for an integrated, consistent view of software projects across the enterprise, giving managers the metrics and analytics required for governance of global teams. SourceIQ automatically analyzes the artifacts in Rational Team Concert to produce a repository of key performance indicators (KPIs) in four critical areas: code quality, code volume and volatility, team contribution, and governance.

The combination of powerful SourceIQ analytics and Rational Team Concert collaboration capabilities delivers a comprehensive development governance solution for Agile teams. This solution empowers managers, executives and developers with timely reporting on progress against work items and backlog, the trajectory of key development streams, and the quality of the software product as it moves through construction into release.

*Adding CAST to the Rational Team Concert source code management component enables the organization to deliver a better engineered product to the business in a more predictable, measurable and consistent manner.*

CAST: providing the visibility to improve application quality and team performance  
CAST adds a layer of application intelligence to the Rational Team Concert platform, which can help raise the IT manager's level of professionalism in running application delivery as a business. The insight provided by CAST dashboards makes software development more transparent and predictable, while increasing collaboration opportunities with suppliers and across geographies.

CAST extends the source code management capabilities provided in Rational Team Concert by auditing code at check-in against best-in-class practices, creating a subroutine-level mapping of the whole system landscape and calculating key software engineering metrics. This audit automatically provides continual and objective assessment of the internal quality of applications being delivered to the business. It's like having thousands of peer reviewers who are collectively aware of how each piece of new code interacts with the rest of the business system. The CAST software platform helps organizations:

- **Increase management visibility.** *Factual, balanced and actionable metrics provide the transparency for IT executives to run complex, multisourced application delivery as a business.*
- **Improve application quality.** *Identification of quality problems and business risk in their critical applications helps IT managers improve end-user satisfaction, while driving down maintenance costs over time.*
- **Enhance team performance.** *Reduced rework, improved reuse, KPIs for the team and on-the-job training for developers to learn best practices can augment productivity, capability and motivation.*

*The CM-Logic work-item connector for JIRA enables bidirectional synchronization of Rational Team Concert work-items with JIRA issue records.*

CM-Logic: enabling collaboration at the work-item level

The CM-Logic software has developed a work-item connector for JIRA, the bug and issue tracking system created by Atlassian Software Systems. Planned for availability in the third quarter of 2008, the connector will enable bidirectional synchronization of Rational Team Concert work items with JIRA issue records. Using this capability, developers will be able to collaborate within Rational Team Concert and still provide other parts of an organization with access to the JIRA environment. The CM-Logic software is designed to enable development teams to adopt Rational Team Concert in a phased approach without affecting the existing processes, policies and reporting of the organization.

In the future, CM-Logic plans to integrate additional issue management systems into the Jazz framework for broader work-item collaboration.

Mainsoft: adding Microsoft Office documents to Jazz artifacts

Mainsoft, a Jazz partner, is working with IBM to integrate the IBM Lotus® Quickr™ and Microsoft® SharePoint popular Web 2.0-based collaboration workspaces into Rational Team Concert and other Jazz technology-based products. Planned for availability in the fourth quarter of 2008, the initial release will integrate IBM Lotus Quickr and Microsoft SharePoint document libraries and document-based business workflows into the Rational Team Concert development process. This will allow Eclipse and Microsoft Visual Studio developers to collaborate more easily on software-related documents by providing rapid access to the team's document libraries using Web 2.0 server collaboration features such as check-in, checkout and version history.

*Mainsoft enhances team productivity and governance of software development projects by enabling business and IT stakeholders to share documents using their preferred productivity and collaboration tools, including the Microsoft Office productivity suite and Microsoft SharePoint technology.*

Mainsoft is also integrating business workflows based on Web 2.0 document management infrastructures to facilitate collaboration between development teams using Rational Team Concert and enterprise teams. Legal, security, product marketing and other subject matter experts who need to review and approve work item-related documents but do not use any development tools will receive alerts and tasks within the IBM Lotus Notes® or Microsoft Outlook application – the productivity tools they already use every day.

Follow-on Mainsoft releases will increase the integration of Lotus Quickr and Microsoft SharePoint contents beyond documents to include calendars, forums and tasks. Future Mainsoft releases will also integrate Microsoft Office desktop applications such as Microsoft Word and Microsoft Excel with Jazz server data, as well as enable business stakeholders to access key Jazz project metrics and dashboards from IBM WebSphere® Portal, SharePoint or any Web Services for Remote Portlets (WSRP)-enabled portal.

#### **Demonstrating the quality of IBM Business Partner contributions**

Through the Ready for IBM Rational software program, IBM publishes rigorous criteria for integrations and offers Business Partners a process by which they can validate their products' compliance with the criteria. Business Partners are able to demonstrate that their solutions conform to the IBM standards. You can be confident that the capabilities you add to the IBM Rational Software Delivery Platform are designed to work effectively with the assets you already have in place.

**For more information**

To learn more about and to participate in the open commercial development project that is building IBM Jazz technology, please visit:

[www.jazz.net](http://www.jazz.net)

To learn more about IBM Rational products and their integration with IBM Business Partner software, contact your IBM representative or IBM Business Partner, or visit:

[ibm.com/software/rational](http://ibm.com/software/rational)



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