



Rational software

IBM Rational ClearCase

Highlights

- ***Increase productivity with parallel development support, automated workspace management, asset reuse and activity-based change management***
- ***Deliver high-quality code with fewer bugs through secure version management and reliable builds***
- ***Balance individual and team needs through development and integration stream models, private workspaces and public integration areas***
- ***Maintain development flexibility with integrated IDE access, integrations with open source and third-party tools, cross-platform support, remote access and disconnected usage***
- ***Scale to accommodate small workgroups as well as large, geographically distributed enterprises***

Balancing development flexibility with effective control of software assets

It's a question of balance. On the one hand, you, as a software developer, prefer to work in a development environment where you have unfettered access to the information and assets you need to create high-quality software. On the other hand, your organization is accountable for delivering business value, which isn't easy because development is as much an art as it is a science. Working with distributed teams, adopting service-oriented architectures (SOAs) and ensuring compliance with an increasing number of mandates all add complexity.

IBM Rational® ClearCase® software can help balance your need for flexibility with the organization's need for control. It provides controlled access to software assets, including requirements, design documents, models, test plans and test results. Parallel development support, automated

workspace management and baseline management enable you to create applications rapidly. Secure version management and reliable build auditing help ensure high-quality code. Development and integration models, private workspaces and public integration areas allow you to work independently, yet collaborate effectively with the team. User authentication and audit trails help your organization meet compliance requirements with minimal administrative hassle for you. And with access virtually anytime, anywhere, Rational ClearCase software gives you the freedom to work efficiently where and when you need.

Increase your productivity

Rational ClearCase software can help you get more done in a shorter period of time. You don't waste time working on the wrong versions of code. And support for parallel development, activity-based change management and asset reuse streamlines the development process.

Solution	IBM Rational ClearCase LT	IBM Rational ClearCase	IBM Rational ClearCase MultiSite
Core capabilities			
Version control	■	■	
Automated workspace management	■	■	
Parallel development support	■	■	
Activity-based change management and change sets	■	■	
Support for midrange development	■	■	
Integration with leading IDEs	■	■	
Local, remote (WAN) and Web client access	■	■	
Support for disconnected usage	■	■	
Access control with user authentication and user authorization	■	■	
Audit trails	■	■	
Transparent, real-time access to files and directories		■	
Build auditing		■	
Support for mainframe development		■	
Replication and synchronization of Rational ClearCase repositories			■
Web-based administration console			■
Server architecture			
Single server	■	■	
Multiple, distributed servers		■	
Replicated servers			■

Match the solution to your environment with the IBM Rational ClearCase family of products.

Sophisticated version control

With Rational ClearCase software, you can always be confident that you're working on the right versions of the right artifacts. Rational ClearCase software manages and controls source code, libraries, documentation, binaries, Web artifacts and virtually any project artifact that can be represented as digital content. It also controls versioning for directories, subdirectories and all file system objects. Developers can see the version, branch and file they are

working on simply by viewing the Rational ClearCase version tree. In addition, Rational ClearCase software offers access to advanced functions that allow you to delete previous versions, create and delete branches, list version histories, and compare and merge versions.

Parallel development

Rational ClearCase software provides extensive support for parallel development, enabling developers to work on the same code base or release, more

easily resolve conflicts and reduce confusion. Automatic file-branching functionality isolates specific changes or versions, allowing multiple developers on the same and different teams to work independently from the same code base. Development and integration stream models define how and when developers deliver code changes. Proven merging and differencing capabilities accept uncontested changes and highlight conflicting changes for faster resolution.

Automated workspace management

With Rational ClearCase software, you have fine-grained control over your personal workspaces and seamless access to the exact file and directory versions you need for different kinds of development activity.

Two types of views, or virtual workspaces, are available. Dynamic views provide transparent access to versions of elements on the network. Snapshot views give you the flexibility to use local copies of file versions while disconnected from the network, and the ability to easily synchronize changes when reconnected to the network. Development teams can mix and match their views based on preferences and project needs.

Activity-based change management

Rational ClearCase and IBM Rational ClearQuest® change management products work together to allow you to define and manage changes to software assets as activities. Through the Unified Change Management capability, file versions in Rational ClearCase software are grouped into logical activities and associated with change requests in Rational ClearQuest software. This activity-based approach enables you to manage your work at the task level, instead of managing individual files. You have a complete view of how development events, including defects and proposed project changes, affect specific files, versions, baselines or releases.

Asset reuse

The less new code you have to create, the faster you can deliver software. The challenge lies in knowing what assets exist, where they reside and how to categorize and reference them in design and development activities. IBM supports the Reusable Asset Specification (RAS) process, which defines a standard way to package reusable software assets. The integration between the Rational ClearCase, IBM Rational Software Architect and IBM Rational Rose® XDE™ Developer solutions makes it easy to search for, locate, download and apply assets from reusable asset repositories located locally or on the Web.

Deliver higher-quality code

Many problems can occur during software development: bugs that have been corrected reappear, previous releases of software are impossible to find or cannot be rebuilt, files mysteriously change or disappear, builds that previously worked suddenly break. The later in your software development cycle that you find a bug, the higher the cost and the greater the risk of delays. Through secure version management and reliable build auditing, and by automating build and release activities, Rational ClearCase software helps to prevent mistakes, reduce bugs and identify errors earlier in the delivery cycle to resolve them more quickly.

Secure version management

Rational ClearCase software provides a robust centralized repository where all development assets are captured and versioned in a secure way. Access control helps ensure that only authorized individuals make changes. User authentication is performed through

operating system authentication mechanisms or through industry standard Lightweight Directory Access Protocol (LDAP). Support for user- and group-based permissions limits access to files and directories. User-based locks are available on Rational ClearCase objects (branches, labels, elements and metadata). Programmatic authorization can occur based on the action being performed.

Reliable build auditing

Rational ClearCase software provides effective build auditing. It helps streamline the edit-build-debug cycle and accurately reproduces software versions. Rational ClearCase software also provides the ability to generate a detailed software bill of materials, which can be used to automatically determine when built objects can be reused or shared by developers using multiple views. By detecting dependencies, reusing derived objects wherever possible and producing detailed build audit trails, Rational ClearCase software helps ensure the reproducibility of software versions.

Automated build and release management

To automate the entire build and release management process, Rational ClearCase software integrates with IBM Rational Build Forge™ software. The Rational Build Forge application continuously monitors Rational ClearCase repositories and executes builds either when a change occurs or on a scheduled basis. This automated build capability significantly reduces the time you and your teammates have to spend chasing down compilation and convergence issues. It also reduces errors that can delay downstream testing and deployment activities.

Balance individual and team needs

The development and integration stream models in Rational ClearCase software define how and when developers deliver code changes. Through private developer workspaces and public integration areas, your need to work independently is balanced with the organization's need to effectively integrate your work with that of your teammates.

Maintain development flexibility

Rational ClearCase software gives you freedom of choice. You can work from where you want, using the integrated development environment (IDE) you want, on the platform you want.

Access from anywhere at any time

Rational ClearCase software allows for easy access from various environments and locations. Desktop clients provide complete Rational ClearCase functionality in a flexible Microsoft® Windows® interface. Remote and Web clients enable you to access versioned objects over a wide area network (WAN).

Rational ClearCase software provides integrations with leading IDEs, including the IBM Rational Application Developer for WebSphere® Software environment, the open source Eclipse framework and Microsoft Visual Studio 2005, so you can work within your chosen environment.

Heterogeneous cross-platform support

Rational ClearCase software supports heterogeneous environments and cross-platform development. You can develop in virtually any development environment, including Microsoft Windows, Linux® (distributed and mainframe), UNIX®, Apple Macintosh (via Web browser), and IBM z/OS® environments, as well as the IBM i5/OS, IBM AIX®, Windows and Linux environments on the IBM System i™ platform. On the server side, your organization can choose from a variety of supported platforms to store software assets while you and your teammates continue to work in your preferred IDEs.

Unparalleled scalability

Rational ClearCase deployments can support thousands of users, working at dozens of sites, managing terabytes of data. Whether your team is a small workgroup at a single location or a highly distributed team spanning multiple geographies, Rational ClearCase software provides the scalability you need for your evolving organizational needs.

For more information

To learn more about how IBM Rational ClearCase software can help you manage and control your software assets across the lifecycle, visit:

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



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

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