

**Narrator:** Hello and welcome to Deployment Tracking and Automation with IBM® Rational® ClearCase® and IBM Rational ClearQuest® and IBM® Tivoli® Provisioning Manager. Today we'll be talking about the features, functionalities and solutions provided to you by integrating these powerful tools.

Companies today face high demands to develop and deploy their software applications quickly, efficiently and cost effectively. Competitive pressures, increased market demands, and the constant need to reduce expenses have only intensified these demands. Adding to this pressure are a host of regulatory requirements and industry mandates that are forcing companies to assess how they develop, modify, and track their applications from development to production – all in an effort to avoid penalties, lawsuits, and negative publicity.

To address these challenges, many companies are looking to integrate and automate their application development and deployment processes in a way that improves their operational efficiencies, eliminates risks, and reduces the time, money, and personnel required to complete applications.

Companies need solutions that accelerate software delivery to help meet project schedules and rapidly respond to customer needs. You also need the ability to detect errors earlier in the software delivery cycle so your teams can improve software quality and meet customer commitments. Lastly, a solution must provide visibility and control of your projects so you have reliable information to make better decisions faster and effectively manage tasks and schedules.

We'll be examining the key barriers you need to overcome to streamline your development and deployment processes. We'll also take a good look at the integrated solution from IBM, featuring Rational ClearCase, Rational ClearQuest and Tivoli Provisioning Manager, that can help you create reliable, repeatable automated processes, meet regulatory compliance requirements, and most importantly, bring your applications to market faster.

## **Challenges companies face today**

**Tina:** “Hi, I'm Tina. I'm a Development Manager. I'm under a lot of pressure from the company brass to get our software out the door on or ahead of schedule. I know my developers are skilled and the final products that we release are generally of high quality, but I can't get my head around why it takes us so long to get our stuff out the door...”

**Narrator:** Most organizations are faced with seemingly never-ending cycles of building, deploying, and rebuilding a host of business-critical applications. Unfortunately, moving

applications from requirements planning to development to testing to deployment and back again remains largely a manual process that is highly time consuming, labor intensive, and prone to errors.

**Tina:** “That sounds like us. We have a tough enough time linking our requirements during the planning stages. Then, it seems like every time we get a build done, the testers get a hold of it and by the time it gets back to my developers, I don’t know what’s been tested, what needs to be debugged, or even what build should be promoted or rejected. It’s like everyone is working in a bubble. I need to get the reigns of all these groups, and if you know how distributed organizations are...it’s not always easy; everyone has a different way of working that they think is best with no good way to enforce policy.”

**Narrator:** A lack of automated processes can significantly increase the time and effort required to complete a release and can cause long-term problems that affect the viability of your development efforts. Mistakes can lead to the rollback of applications, which in turn can lead to unplanned downtime of business-critical applications.

**Tina:** “I can’t afford any downtime! For us, downtime means: lost revenue, decreased productivity, and reduced customer satisfaction. Not to mention how it makes us look to our higher ups and the industry...”

**Narrator:** Having disconnected development and deployment processes undermines the ability of your organization to establish repeatable development and deployment processes that ensure the quality and reliability of the applications you’re producing. When your organization lacks auditable processes that enable you to easily track the software configurations that are used to build a deployed application and the versions that are in operation, the overall time to market increases.

**Tina:** “Tell me about it. And as if this wasn’t bad enough, now I’m being told that our releases are going to be under scrutiny from some new team....something to do with compliance mandates? I can’t afford to have anyone else further complicating my development process. Added cycles are bound to mean additional time to market.”

**Narrator:** Also, a lack of auditable processes makes it difficult for you to comply with regulatory requirements. As part of a compliance program, you must be able to trace all activities from development through production. This includes maintaining a complete audit trail that indicates what changes were made during development and deployment, who made them, and who

approved them. It also means creating a formalized release process that captures what build artifacts are associated with the release and who approved the deployment of applications into test and production.

**Tina:** “Wait, wait, wait...this sounds complicated. I can’t have any of my team members worried about manually tracking all their development activities and configuring applications to test or deployment servers – that’s not what they are getting paid for. Not only would their time be better served working on the code, but manual processes scare me. When I hear the word ‘manual’, I hear error prone, repetitive and time consuming.”

“My other biggest concern here is whether or not the build we deploy is the same one that passed through testing – or for that matter if the final product matches the original requirements. If we can’t be sure that the application in production contains all the right enhancements and bug fixes, we’re gonna be in real hot water. I mean, we’re talking about potential quality issues, delays in delivery and nightmares for my developers trying to reproduce and fix defects. I need a solution that will help me keep all of this in order!”

## **Integrating and automating the development and deployment processes**

**Narrator:** Development and deployment have traditionally been set up as separate organizations with disconnected processes. Through integration and automation, your organizations can merge these multiple processes into a unified process that enables the development and deployment disciplines to share data regarding applications across the entire application lifecycle.

To gain the most from this type of integration, you need a solution that will speed the delivery of software apps, that will help ensure overall high-quality delivery, that will give you project-wide visibility and help you control and enforce the end-to-end software process, requirements definition thru deployment. This means you need a solution that provides process automation and workflow management to ensure consistent, repeatable processes are maintained across the entire lifecycle. You need lifecycle traceability that links requirements, code, defects, tests cases and build and deployment assets to ensure that the correct version of an application is deployed and that an application performs as it was designed to perform. You also need auditability in place to trace the origin and details of all activities that took place during the application development process, see who took part in all activities and verify and document any changes that took place and who authorized and signed off on those changes. Finally, you need a secure solution, one that will eliminate the chance that source code and build artifacts may be tampered with by employing robust access and versioning control capabilities and user authentication functionality such as electronic signatures that allow only authorized personnel to make changes.

**Tina:** “Wow that sounds good to me. This could really help me pull together all the teams we have working on our software. But are there tools out there that can really do all this?”

## **The IBM Rational solution at work**

**Narrator:** Rational ClearCase, Rational ClearQuest, Rational Build Forge and Tivoli Provisioning Manager products are integrated in a way that enables organizations to automate their development, testing, and deployment processes across the application lifecycle.

- **Rational ClearCase** – A software configuration management tool providing your development, testing, and deployment teams with instant and secure access to the data they need to effectively manage, control, and reuse their software assets throughout the development process.
- **Rational ClearQuest** – A change management product that helps your organization track changes throughout a project, access real-time status and reports on various projects, and creates repeatable, enforceable processes that span the application lifecycle.
- **Tivoli Provisioning Manager** – A deployment orchestrator that automates the manual tasks of provisioning and configuring servers, operating systems, middleware, applications, and storage devices via workflows and automation capabilities.

While each of these products offers unique capabilities and features, when combined, they enable your organizations to define and execute a repeatable cross-functional process that allows them to quickly develop and distribute their applications.

**Tina:** “I’ve heard of all of these IBM products before. But I had no idea that they are integrated to provide such a powerful solution. So how does it work?”

## **Tracking applications across the lifecycle**

**Narrator:** The deployment tracking capabilities in Rational ClearQuest allow organizations to track and record all development and deployment activities – from requirements through to production – and approvals throughout the project lifecycle. This capability enables lifecycle traceability between requirements, code changes, build, test and deployment. With Rational ClearQuest, organizations can also establish deployment approval gates and key security checkpoints, while electronic signatures enable organizations to document authorizations and signoffs at key stages in the application lifecycle.

**Tina:** “Ok, sounds like our brass will be happy. They will love knowing that every action can be accounted for. Plus I can see a real benefit in being able to run reports and queries in Rational ClearQuest on all this deployment information. How does Rational ClearCase fit in?”

**Narrator:** Rational ClearCase generates a deployment record that identifies the build files that it has stored for a specific deployment package. Rational ClearCase enables development teams to identify the latest builds at any time and reproduce previous builds as required. When combined with Rational ClearQuest, this solution enables you to track the application deployment and to approve the deployment as needed, providing complete audit trails for the applications.

**Tina:** “Amazing! We’ve been using Rational ClearCase integrated with Rational ClearQuest with for years now. But I had no idea they had been enhanced to do all this. This is going to make working with testers and developers a cinch. You mentioned one other product, something from the Tivoli brand?”

**Narrator:** That's right, the Tivoli Provisioning Manager. It can access the deployment package directly from the source code stored in Rational ClearCase and then deploy that package into the testing phases or into production. Once deployment is completed, Tivoli Provisioning Manager updates the deployment record in Rational ClearQuest, where all deployment records, including requirements, code changes, testing data, and build information, are stored. This provides traceability across the lifecycle, from requirements definition through deployment. The Rational Build Forge tool creates a complete bill of materials which lists changes and the content of each build for accurate testing and problem resolution.

**Tina:** Sounds like it does more than just that. I can see how this solution will help my team increase the speed of developing and deploying applications. Heck, we may even see reduced labor costs by automating some processes. Our testing group may have less to worry about since we will have the tools at our hands to reliably increase the software quality. And I know for a fact that we'll reduce deployment errors and the need to retest applications since we're better tracking builds and ensuring that the right ones are deployed. Our compliance guys will be happy too since this solution helps us comply with internal and external requirements and any audits they come with, by tracking all activities across the application lifecycle. Plus I know my job is gonna be easier once we establish repeatable and auditable processes to control my development and deployment processes. Not to mention how much easier it will be to see all my team's project status with real-time visibility across the entire lifecycle.

## Conclusion

**Narrator:** Organizations are continually looking for ways to decrease the amount of time and money required to develop and deploy their applications. At the same time, they are determined to ensure that the quality of those applications is not diminished in any way.

By integrating Rational ClearCase, Rational ClearQuest, and Tivoli Provisioning Manager, IBM is delivering a comprehensive solution that enables organizations to merge their development and deployment processes into a single process that spans the application lifecycle. Through an integrated process, organizations can reduce labor costs, improve overall software quality, gain visibility into all aspects of software projects, accelerate and improve their development and deployment processes, make better use of their personnel resources, and ensure they comply with internal and external rules and regulations.

Thanks for watching Deployment Tracking and Automation from IBM. We hope that you enjoyed what you saw and learned about how one of IBM's newest solutions can help you create reliable, repeatable automated processes, meet regulatory compliance requirements, and most importantly, bring your applications to market faster.

For more information on IBM Rational ClearCase and IBM Rational ClearQuest, be sure to check out the Change and Release Management product library at: <http://www-306.ibm.com/software/awdtools/resources/scm.html>

Here you can get case studies, data sheets, white papers, webcasts and even other demos of the Rational products mentioned today.

For more information about the Tivoli Provisioning Manager check out the product overview page at: <http://www-306.ibm.com/software/tivoli/products/prov-mgr/>. You'll find links to more information, product demos and more.

Also, don't forget to check out IBM developerWorks – IBM's online resource for developers for more information on all of IBM's solutions.

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