IBM

IBM Rational Achieves Scalable Build and Release Processes with BuildForge

Overview

IBM® Rational® software, a division of IBM's Software Group, is a leading provider of software development tools. IBM Rational delivers well known application lifecycle management products, including IBM Rational ClearCase®, IBM Rational ClearQuest®, and IBM Rational RequisitePro®, to help development organizations rapidly deliver high quality products to market.

■ *Business need*
Charged with supporting many products on multiple operating platforms, the Release Engineering group sought to create a more robust build and release environment to make better use of their staff and hardware resources and keep release schedules on track.

■ *Solution*
IBM Rational software implemented BuildForge to provide a centralized build and release management system across their diverse development environment.

■ *Benefits*
The team significantly improved team productivity, resource utilization, and product quality by implementing a scalable build and release management infrastructure. While leveraging their existing development tools and build scripts, the team was able to increase reliability and visibility into their end-to-end development processes.

"IBM Rational software is constantly striving to improve its own software development practices to improve our product quality and our development efficiency. This requires that our end-to-end development lifecycle be predictable, scalable, and completely traceable. BuildForge's build and release management platform is an integral part of the system used by the IBM Rational ClearCase development team to produce the market-leading Rational ClearCase product. BuildForge's automation and control help us to deliver better quality with more predictability."

Lee R. Nackman
Vice President
Product Dev. & Customer Support
IBM Rational software

IBM Rational software, a division of IBM, is one of the industry's leading software development tool providers. Leading software development and IT organizations look to IBM to set the standard, so their tools and methods must be up to the task.

Supporting the release engineering demands of this configuration management leader is no small task. With a development team of 350 people in locations around the globe and over a hundred servers across eight different operating platforms to manage, scalable processes and precise automation is critical for timely releases.

Internal Automation Only Goes So Far

The Release Engineering team had automated many of their build and release processes through scripting, but found that the system was not able to scale to meet increasing demand and complexity. Each task operated independently, so the overall process had to be coordinated with properly timed wait periods in between. If something took longer than expected, it could cause the entire project to fail. When the nightly build broke, it often resulted in a lost day of testing.

Their internal system didn't make effective use of their substantial server farm of over 100 systems. Projects were hard coded to specific machines which meant some systems were maxed out while others sat idle. What's more, specialized scripting for each process made it difficult for team members to share work or fill in for someone who was absent.

A Better Way – Centralized Build and Release Management

After evaluating BuildForge, the team quickly realized they could make their resources work smarter, not harder. BuildForge helped release engineering centralize their siloed processes under a single management console. BuildForge fit in seamlessly with their existing scripts and tools—IBM Rational ClearCase, IBM Rational ClearQuest, IBM Rational Robot, and others—so they were able to get up and running quickly. They can now create intelligent links between their processes to orchestrate the entire code-build-test-release cycle. "With our previous system, if something went wrong along the way, we'd have to start over and we'd typically lose a day of testing." said said Dave Barr, Software Development Manager, IBM Rational sofware. "Now we can pickup right where we left off and quickly make up for lost time. More importantly, the entire process is more reliable and robust, so there are fewer times when we need to recover."

Doing More with Less

Using BuildForge, the IBM Rational software team became proactive versus reactive. Staff monitor projects efficiently from their BuildForge build and release dashboard, and can quickly pinpoint and resolve errors when they occur. BuildForge "hides" all of their build complexity, so team members can execute tasks with the push of a button. This makes it easier for the team to share their workload without specific project training. They now save almost a day a week to focus on other mission-critical work. The team is also able to provide more services to the groups it supports, with the same staff. "BuildForge makes it easy to manage multiple projects simultaneously", Mr. Barr said. "My team has one place to go for all the information they need. In addition, there are fewer fire drills because the builds are more dependable."

Kicking Builds and Releases into High Gear

BuildForge helped release engineering optimize the use of their hardware for better performance and faster release cycles. Their vast server farm now makes use of server pools so work can be distributed efficiently. Using the threading option, non-dependent tasks may be run simultaneously across different servers—even on multiple platforms. This reduced build times for some IBM Rational software products from about a day to less than three hours.

Better Quality Through More Test Cycles

Now that they're building faster and more reliably, the team has more cycles to test the software. The QA team gets immediate access to the latest build and can see exactly what they need to test. By improving reliability, IBM Rational software has gained more testing time to make sure their products are bullet proof.

The Future – Empowering Developers to Achieve Further Gains

Based on the success of their initial BuildForge implementation, the release engineering team plans to open up the system to the development team. Using built-in role-based security, developers can be given limited access to approved production processes directly from their IDE environment. Developers will be able to validate their work—both before and after IBM Rational ClearCase source check-ins—to identify and resolve errors before they impact the nightly run. Developers will gain greater confidence in their code, and the team expects even further productivity and quality gains.

Results Speak for Themselves

Leaders hold themselves to a higher standard. With BuildForge, IBM Rational software was able to take their development to the next level.

In short order, the team was able to generate impressive results:

- *More test cycles for higher quality*
- *Faster builds and releases*
- *More efficient staff*

Consider the bar raised.

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