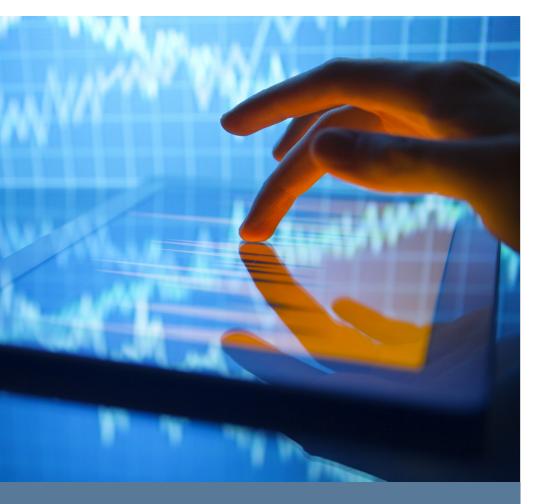# Major financial firm advances DevOps with trusted database tools

A Fortune 500 company used Toad® and Toad DevOps Toolkit to integrate database development into their new DevOps initiative.

BUSINESS NEED

Senior executives committed to Agile development and DevOps to spur innovation. But database professionals needed proof that integrating the company's vital databases into the workflow would not lead to data loss.

SOLUTION

Using Toad® and Toad DevOps Toolkit, the company successfully completed a year-long proof of concept integrating their database development into the DevOps workflow. Database developers rely on Toad for easy unit testing and code analysis to meet quality control standards. The company will now initiate a pilot project that uses Toad and Toad DevOps Toolkit to automate code quality and testing.

BENEFITS

- Better quality code, based on code analysis evaluations

- Faster testing, using a repository of reusable code test cases

- Anticipated improvements to software release velocity in the DevOps pilot, based on Toad DevOps Toolkit automation

SOLUTIONS AT A GLANCE

- Database management

"It's a challenge ... because we have all these databases and the data is so pristine to us. It's our Holy Grail."

Senior manager, database management, major financial company

To gain a competitive edge, a leading US-based investment and insurance company committed to DevOps. Senior management established a DevOps Center for Excellence and assembled a solution architecture team. Yet even with this heavy investment, implementing DevOps has hit the obstacles of unproven technology and outmoded IT thinking.

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>
> *Senior manager, database management, major financial company*

THE NEED FOR SPEED

Agile development helps organizations innovate faster – quickly enough to outdistance the competition with new products and services. In the fast-paced world of investment and finance, Agile software development has become a requirement. So when this leading firm bought into the Agile approach, it issued a company-wide mandate for a phased switchover from traditional "waterfall" development. They organized the required DevOps functionality into 28 categories and five levels of DevOps maturity, then instituted criteria each team had to meet.

MEETING A CULTURAL CHALLENGE

Because the Agile approach has been shown to lower risk and promote flexibility, application developers have overwhelmingly accepted it. Database development has lagged behind in acceptance. Moving to DevOps is a cultural change for database professionals, who are traditionally the gatekeepers of a company's data. "It's a challenge," notes the company's senior manager of database management, "because we have all these databases and the data is so pristine to us. It's our Holy Grail." To assure that the company's precious data is accurate, available and never lost, developers want to maintain hands-on control. However, manual database development does not happen fast enough to stay in sync with Agile software development and adding more database developers to a project can slow the process down even more. The key to integrating database development into DevOps is automating development processes. The obstacle this manager faced was finding DevOps tools that combined the rigor to do the job with the ease of use and reliability his teams would trust.

Fortunately, the company's database teams in multiple lines of business as well as in the corporate data warehouse were already using Toad extensively. The company-wide DevOps initiative included guidelines to review existing tools for the required capabilities, so the database team decided to take a broader look at Toad. They discovered that they could do much more with Toad than they had previously thought. "While exploring several other tools," says the senior manager, "we found that Toad has come up with new tools and more capabilities in these tools, like Team Coding. So it was a no-brainer for us to pick Toad."

The team's familiarity with Toad reliability and ease of use lowered their resistance to using it in their Agile efforts. Toad includes a number of DevOps-ready features, including Code Tester, which can automate the creation of unit tests, and Code Analysis for static code review. A crucial area for the team to try out was the Toad Team Coding capability. Because they were already comfortable using Toad, the company embarked on integrating their Oracle database development into DevOps. Over the course of a year, they followed a careful, phased approach, progressing through a series of proof of concepts (POCs) of tools and methods to determine what worked best. Along with Toad, they tested Toad DevOps Toolkit, a Quest® application that makes Toad functionality accessible to common DevOps build automation tools, such as
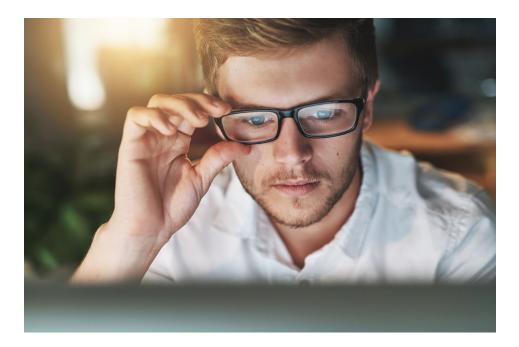

PRODUCTS & SERVICES

SOFTWARE

Toad for Oracle

Toad DevOps Toolkit

Quest

Jenkins, enabling Continuous Integration of database development in the overall DevOps workflow.

THE QUEST FOR ZERO "TECHNICAL DEBT"

The POCs focused on quality control, with the goal of achieving zero technical debt; that is, delivering code of such good quality that it can go straight to production without reworking. Again, this goal came up against tradition: some of the existing PL/SQL code was 20 years old and every department—in fact, every developer—had their own set of best practices. Developers had also been routinely skipping unit testing of small changes to code. "Unit testing was a prime example of the problem," says the senior manager. The habit of leaving minor changes untested early in the development process risked code defects that could raise the technical debt and take longer to fix later in the development process, but creating the tests was time consuming.

Part of the problem was the lack of a repository for PL/SQL code test cases. When a test case was built, it was used once only. There was no capability to repurpose it or reuse it for future releases. It can take several hours to build a test case and the team had to repeat the process for every test, even for similar code. The Toad Code Tester capability let them save their test code and reuse it, dramatically improving the efficiency of the testing as well as code function. "In our demos, we were building simple test cases and with Code Tester, in two clicks, you get the whole test code generated," says the manager. "A complex test would take a few more changes, but the point is, it's much easier to create a unit test with Toad than with other tools." This ease of use, along with the familiarity of the Toad integrated development environment, won the team over.

The developers also used the Toad Code Analysis feature to evaluate code quality and complexity, assuring that pre-defined best practices were followed as the code was developed.

The POC phase culminated in an end-to-end demo from Continuous Integration to Continuous Testing using Toad and Toad DevOps Toolkit. With the success of the demo, the company is now ready to start a pilot project that will use Toad and Toad DevOps Toolkit to automate code quality and unit tests. The pilot will follow DevOps practices for four of the company's applications. The Toad DevOps Toolkit Jenkins plug-in will enable the team to integrate database development steps into the overall DevOps workflow. "There's quite a bit of interest," says the manager, "a lot of excitement on the team that the tools are available and they can use them."

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HOW IT ALL CAME TOGETHER

At the outset of the POC phase, the database team needed help understanding how they might best use the wealth of Toad features that they hadn't exploited before. In particular, Team Coding was new to the group. To help his team determine the best approach throughout the POCs, the manager contacted Toad Product Manager John Pocknell, who answered questions and provided detailed training. Based on the material John provided, the company created a number of three-hour training sessions on Toad capabilities for DevOps. "It really reduced our knowledge gap of those features of Toad," says the manager, "how seamlessly to integrate with our version control tools, how easy it is to get schema compares and code analysis done, and all the hints and best practices we can get when the developer is coding." In fact, these training materials are being distributed throughout the company to other groups interested in using Toad and Toad DevOps Toolkit in their own ramp-up to DevOps. "We're giving it to whomever is using Toad so that they can get familiar with and start using those features, and there's a very high interest in the capabilities of these tools," says the manager. "So, it all came together. It's an amazing partnership."

ABOUT QUEST SOFTWARE

Quest helps our customers reduce tedious administration tasks so they can focus on the innovation necessary for their businesses to grow. Quest® solutions are scalable, affordable and simple to use, and they deliver unmatched efficiency and productivity. Combined with Quest's invitation to the global community to be a part of its innovation, as well as our firm commitment to ensuring customer satisfaction, Quest will continue to accelerate the delivery of the most comprehensive solutions for Azure cloud management, SaaS, security, workforce mobility and data-driven insight.

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