Mainstream the Mainframe with Automated Multi–platform Continuous Code Quality Management

On January 4, 2018, Compuware marked its 13th quarterly announcement since embarking on its mission to mainstream the mainframe.

Superstition holds the 13th of just about anything is bad luck. (Doubt this? Look for the 13th floor in buildings!¹). Exceptions exist, e.g. the accordion was patented on Friday, January 13, 1854. The Los Angeles Hollywood sign was unveiled on July 13th, 1923.

Another such exception is Compuware’s announcement of the integration of Topaz with SonarSource SonarQube, a popular continuous code quality solution used by more than 900 digitally innovative enterprises, that provides continuous, automated inspection and analysis of COBOL code. Maintaining code quality through development and inevitable subsequent changes during operations has been a major IT headache forever. In addition, the ability to automatically go through the process of code testing and analysis and get results that will directly link errors to source code, highlight untested code, and view meaningful metrics for cross-platform code quality have all been a next-generation dream for mainframe developers. Not any longer.

It’s all here and is a significant advance for agile solutions development. Integrating Compuware Topaz for Total Test unit testing, which leverages Xpediter code coverage capabilities, with SonarQube will make life much easier for existing, experienced as well as newcomer mainframe DevOps staff. Here’s how we see it.

¹ For more information see: https://www.quora.com/Why-is-the-13th-numbered-floor-missing-from-buildings-When-did-this-begin
**The Challenge**

Despite advances in testing and structured coding processes, shipping error-free application code, consisting of thousands of lines written by an army of developers, is a practical impossibility. Frequent post-deployment updates and modifications further complicate the problem. Today’s blended IT environment means mainframe code must be continuously updated and integrated. This can involve work done by new-to-the mainframe staff, which can increase risk due to unfamiliarity with complex and undocumented code coupled with the integration and consolidation of IT operations. Code reviews, mentoring, and best practice training can lower bug counts and increase quality, but major problems remain in finding and correcting source code errors not to mention poor programming practices.

Despite monumental efforts, human fallibility frustrates perfectibility, resulting in what has been a highly risky compromise: focusing on major problems while minimizing the rest. The dynamic and evolving IT ecosystem can change vulnerabilities and code priorities making yesterday’s low-risk code a major liability, given the financial and operational liabilities incurred when poor quality code causes a public failure.

**Compuware and SonarSource**

The new integration automatically feeds code coverage results captured by Topaz for Total Test into SonarQube. The ability to automate code coverage tracking addresses a long-time, fundamental problem in COBOL code testing and management. Specifically, there existed no way to accurately track and validate code coverage of COBOL application testing—with the same ease and employing the same processes—as is available and done with Java and other more mainstream code. Even more significantly, it materially advances DevOps testing and coding process with a new level of capability and precision in the identification of errors, as well as weaknesses in the code.

Topaz for Total Test’s automated unit testing and Xpediter’s code coverage collection capabilities coupled with SonarQube’s analysis and reporting enable developers to gain insight into the coverage of code being promoted for all application components across all platforms. Importantly, Compuware’s solution captures code coverage metrics directly from the source code itself, which is not only more accurate but also eliminates what was once a complex task predicated on knowing the idiosyncrasies of how source listing models map to the actual source code. Figure 1 below shows an example of the data provided in the SonarQube dashboard.

Further, the integration provides the capability to monitor and manage the overall quality of not just coding, but testing as well. Developers get informative, data-driven feedback
on code quality. A visual representation of the code being executed is available. They can see exactly what code is and what is NOT being tested.

In short, the developer has more information and better insight into code quality, along with the detailed data to decide how to adjust. And, organizations gain from getting better, more informative test results. An accelerated process and more detailed data reporting will help build stronger communications and operational links between development and operations staff.

The Final Word

Compuware’s mission to “mainstream the mainframe” has succeeded because of their ability to make mainframe utilization and COBOL code maintenance efficient and straightforward, as well as far less intimidating to new users. They have exposed as wrong or eliminated many of the arguments against the mainframe. Their strategy has mainframe DevOps and management transparently operating and participating in IT and business operations.
Compuware has identified and solved problems that had been ignored or considered to be unsolvable. They integrated with multiple open systems tools and solutions for the mainframe environment. A series of alliances, add-ons, extensions, and new products improved and sped up mainframe developer productivity and simplified operations management. Bringing the latest DevOps tools to the mainframe is helping to attract a new generation of developers. Not incidentally, this has contributed significantly to the breakdown of organizational silos that historically have separated and isolated mainframe operations from enterprise IT and business centers.

Compuware has attacked hardcore issues in multiple ways, including making mainframe capabilities accessible to the latest in management, DevOps, operation tools and solutions. They partnered with vendors to make mainframe solutions available on the AWS cloud and accessible via web interface services. They made open systems tools and solutions work with mainframe applications and data. They radically changed mainframe operations. Speeding up, improving and simplifying operations and management of the mainframe, all while bridging the gap between mainframe and open systems community activities.

Compuware delivered significant, game-changing products each quarter for the last three years. They have improved, simplified and sped up operations and management. They have introduced capabilities that were never thought possible; thus driving radical change in mainframe development and operations. With this latest release, they take another big leap to bring together automated unit testing and COBOL code coverage with the ability to get an accurate, unified view of quality metrics and milestones across platforms, thereby providing a data-driven basis for continuous improvement. These improvements and the resulting benefits will be realized in the quality of the code produced, testing process and in the overall quality of the resulting services.

Compuware advertises itself as delivering “Agility without Compromise” with “simple, elegant solutions that enable a blended development ecosystem.” In our opinion, they are delivering everything that they promise. They are providing solutions that set the standard for IT DevOps for the next decade. Just what you would expect from “The Mainframe Partner for the Next 50 Years.” Kudos to them.