

Coverity Scales to Meet Teradata Challenge

“We spend a lot of time buying technology, and we often have to do a lot of extra work to make it usable. Coverity Prevent SQS, right out of the box, has been one of the easiest products to work with, when you consider the complexity of what we’re dealing with and the size of the code base Teradata has.”

—John Costa, Teradata Director of Tools and Quality Engineering



Coverity customer since: 2005

Industry: Data warehousing

Business Problem:

Hundreds of major companies around the world use Teradata solutions to get a single, integrated view of their business to enhance decision-making, customer relationships, and profitability. Given the prominent role Teradata data warehousing plays in its customers’ businesses, the reliability and security of its software is truly mission-critical. Teradata needed a software quality solution that could scale with its massive code base as well as identify and help resolve the most difficult-to-find bugs.

Results:

Teradata initially evaluated four different static analysis tools and ran a benchmark test to determine which provided optimal performance. The company tested each solution on multiple pieces of code with deliberately planted errors of increasing sophistication. The result: Coverity Prevent SQS® found more meaningful errors than any of the competing products.

The Teradata Challenge

Teradata provides a relational database management system that is linearly and predictably scalable in all dimensions of a database system workload (data volume, breadth, number of users, and complexity of queries), explaining its popularity for large enterprise data warehouse applications.

Teradata’s build environment is a modified Clearcase XML-based build system, which allows simultaneous, distributed build processes on multiple platforms. Teradata has approximately 1,500 developers, both offshore and onshore, with approximately 500 simultaneous users at peak times working on millions of lines of code. Teradata’s large, very complex, and ever-changing code set requires software quality tools and processes that can scale to this massive size.

The Solution

Coverity Prevent SQS was chosen to replace an outsourced code inspection service in late 2005. John Costa, Teradata Director of Tools and Quality Engineering, explains the benefits of using Coverity: “Coverity’s solution is specifically designed to process large amounts of code as we have experienced with our code set. Coverity Prevent SQS has a modular, extensible, and scalable architecture with a good balance between rigorous code analysis and speed.”

Coverity’s products easily integrate with Teradata’s existing analytics environment with multiplatform and multilanguage support. Teradata also reports that customer support at Coverity is exemplary. “The working relationship we’ve established with the Coverity support team and the responsiveness we are getting demonstrates their excellent communication with us,” Costa states.

The Details

A major strength of Coverity Prevent SQS is its ability to report very few false positives. This is due to providing strong evidence for every error it reports and allowing the user to add information about the semantics of the code for the analysis to use. For example:

- Functions can be associated with certain behavior classes, such as “terminates execution,” “allocates dynamic memory,” and so on
- Macro expansion can be selectively suspended and replaced with predefined function models
- The user interface of Coverity Prevent SQS allows Teradata users to track multiple analysis runs, problem status, and extensive usage and error reporting

The Net Result

“With inter-procedural analysis and 100% path code coverage, we are confident that Coverity Prevent SQS is finding the rare defects in our code that would be very difficult to discover with dynamic or manual testing,”

—John Costa, Teradata Director of Tools & Quality Engineering.

Conclusion

Coverity Prevent SQS is used daily by Teradata as the source code analysis solution that ensures Teradata’s 800 customers do not encounter software issues while accessing, manipulating, or reporting their data.

About Teradata

Teradata is the global technology leader in enterprise data warehousing solutions and consulting services. Organizations around the world rely on the power of Teradata’s award-winning products to get a single, integrated view of their business to enhance decision-making, customer relationships, and profitability.

Teradata has led the data warehousing market for more than 25 years and is currently serving more than 800 customers and more than 1,200 implementations at many of the world’s top telecommunications, retail, transportation, healthcare, government, and financial companies.

For more information about Teradata, go to www.teradata.com

About Coverity

Coverity (www.coverity.com), the leader in improving software quality and security, is headquartered in San Francisco, California. Coverity’s groundbreaking technology removes barriers to delivering complex software by automating the identification and resolution of critical defects and security vulnerabilities in C/C++ and Java source code. More than 250 leading companies have chosen Coverity Prevent SQS because it scales to tens of millions of lines of code, has the lowest false positive rate in the industry, and provides total path coverage. Companies like Ericsson, HP, Samsung, EMC, and Symantec work with Coverity to eliminate security and quality defects from their mission-critical systems.

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