

## Automatically Identify Runtime Concurrency Defects

As more and more companies develop and deploy Multi-threaded Java applications on multi-core hardware, the job of ensuring the quality of these software systems has become more challenging. Multi-threaded software is more complex, impossible to test exhaustively, and introduces a new class of critical concurrency defects—race conditions and deadlocks—that can cause data corruption or system failures.

Coverity Thread Analyzer for Java is the first dynamic analysis solution for Multi-threaded Java applications that automatically and predictably detects existing and potential race conditions and deadlocks that can cause deadly application behavior.

With exceptionally low overhead, it identifies not only problems that will occur in limited testing environments, but also problems that have the potential to occur over extended operations in field environments.

### Benefits of Coverity Thread Analyzer

- Rapidly detect serious concurrency errors
- Avoid data corruption and system failures
- Reduce risk of migration to multi-core systems
- Leverage static analysis results and speed time to value

Coverity Thread Analyzer automatically and proactively identifies race conditions and deadlocks at run-time, without relying on fortuitous timing or non-deterministic behaviors. It sharply reduces the problem of testing billions of unpredictable thread interleavings to ensure thread safety and application reliability.

With Coverity's combined analysis, Prevent can use the critical data provided by Thread Analyzer to further increase accuracy of static analysis while Thread Analyzer can leverage Prevent results to speed the dynamic analysis of code. Thread Analyzer can infer critical data from execution paths that were exercised during testing and pass that information on to Prevent for improved accuracy in static analysis of all other program paths, even ones that were not exercised. Coverity Thread Analyzer can use information provided by Prevent's static analysis to avoid instrumentation when there is no possibility of an error occurring, thereby improving performance.

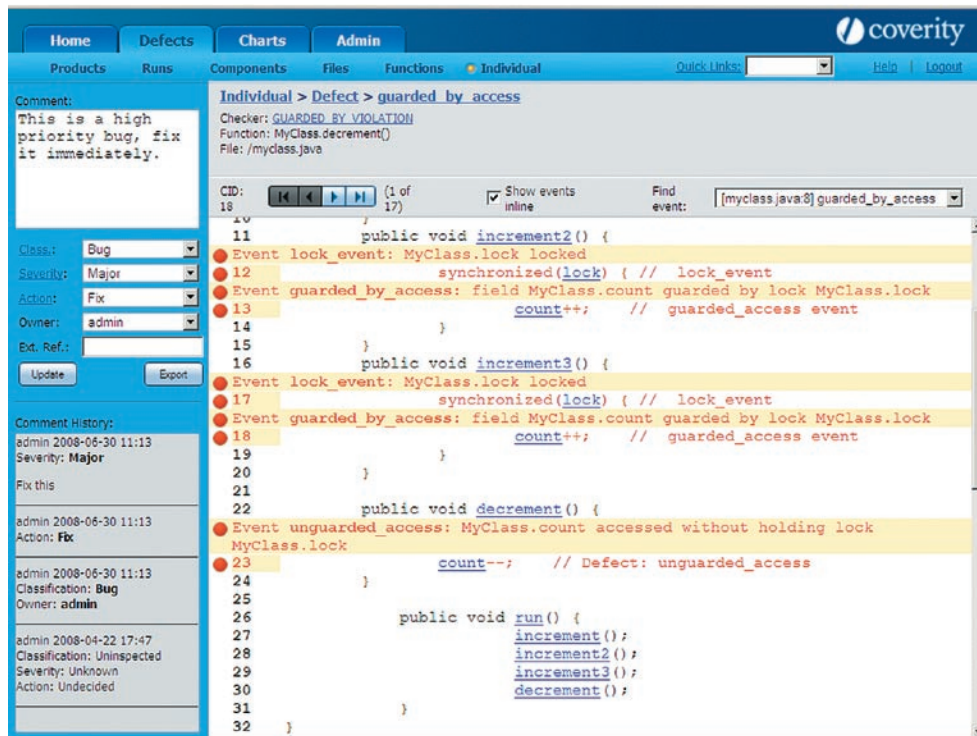
Coverity Thread Analyzer and Coverity Prevent for Java work together to provide a powerful solution for detecting serious defects and delivering high-integrity software.

### Coverity Thread Analyzer Features

- Detection of existing and potential deadlocks
- Detection of existing and potential race conditions
- Integration with Eclipse IDE
- Easy-to-use interface with searchable lists and detailed views
- Exceptionally low performance overhead
- Leverages Coverity Prevent data to speed analysis

### Challenges of Multi-threaded Software Development

- New concurrency defects increase the risk of data corruption and failure
- Races and deadlocks are intermittent and impossible to reproduce
- Current testing methods are time-consuming and inadequate
- The expanding number of cores increases the chances of system failure



*Coverity Thread Analyzer rapidly identifies race conditions and deadlocks. Its intuitive interface makes it easy to analyze, triage, and remediate concurrency errors.*

### Coverity Thread Analyzer

Supported Platforms	System Requirements	Supported Java Environments JDK 1.5 or Higher	IDE Plugin Support
<ul style="list-style-type: none"> <li>Linux (32-bit and 64-bit)</li> <li>Solaris Sparc</li> <li>Solaris X86</li> <li>Windows XP and Server 2003</li> <li>Mac OS X</li> </ul>	<ul style="list-style-type: none"> <li>1 GHz CPU (x86 or SPARC)</li> <li>1 GB of RAM minimum, 2 GB recommended</li> <li>1 GB of free HD space</li> </ul>	<ul style="list-style-type: none"> <li>BEA JRockit 5 or higher</li> <li>IBM Version 5 or higher</li> <li>Sun Java Version 5 or higher</li> </ul>	<ul style="list-style-type: none"> <li>Eclipse 3.2 and above</li> </ul>

### Free Trial

Request a free Coverity trial and see first hand how to rapidly detect and remediate serious defects and vulnerabilities. No changes to your code are necessary. There are no limitations on code size, and you will receive a complimentary report detailing actionable analysis results. Register for the on-site evaluation at [www.coverity.com](http://www.coverity.com) or call us at (800) 873-8193.

#### About Coverity

Coverity ([www.coverity.com](http://www.coverity.com)), the leader in improving software quality and security, is a privately held company headquartered in San Francisco. Coverity's ground breaking technology enables developers to control complexity in the development process by automatically finding and helping to repair critical software defects and security vulnerabilities throughout the application life cycle. Hundreds of companies worldwide including ARM, Phillips, RIM, Rockwell-Collins, Samsung, and UBS rely on Coverity to help them ensure the delivery of superior software.

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