



Klocwork Insight: Comprehensive C# Source Code Analysis

Klocwork static source code analysis provides deep, customizable analysis of C# code with full Microsoft Visual Studio integration

Software developers use Klocwork's proven static source code analysis tools to help them write better code. By providing a fully automated inter-procedural control flow, data flow, value-range propagation and symbolic logic analysis, Klocwork can find hundreds of errors on well-validated, feasible execution paths for C#, C/C++, and Java programming languages.

The range of issues found with Klocwork Insight number in the several hundred and vary depending on specific programming language being used. C# developers face many of the same problems as users of other languages, plus many situations that are unique to the language and the underlying .NET framework. With Klocwork Insight for C#, a variety of situations in which C# code will cause failures, either immediately or over time, can be detected.

// CRITICAL BUG DETECTION FOR C#

Klocwork Insight for C# can detect dozens of specific bug types that fall into the following high-level categories:

- Invalid Object References
- Incorrect Contractual Obligations
- Weak Coding Practices
- Long-term Maintenance Issues

Three specific examples of potentially critical bugs that can be found with Klocwork include:

- NULL object dereferences, which often surface in larger systems where different developers are responsible for inter-dependent modules.
- Reverse NULL object dereferences which occur when an object is dereferenced, then compared with NULL, and there are no pointer changes on the trace between dereferencing and checking.
- Invalid cast operators which attempt to coerce an object from its native type to an incompatible type.

// IMPROVE YOUR DEVELOPMENT PROCESS WITH EARLY BUG DETECTION

Klocwork Insight is a groundbreaking approach to source code analysis that has been proven in some of the most demanding software development environments in the world. With Klocwork Insight, organizations can address both software quality and security by:

- Moving critical bug detection to the earliest point in your development process
- Delivering a consistent critical bug removal capability to all developers
- Empowering developers to fix bugs and vulnerabilities before they check-in their code
- Enabling security specialists to push security and architectural policies out to each developer's desktop

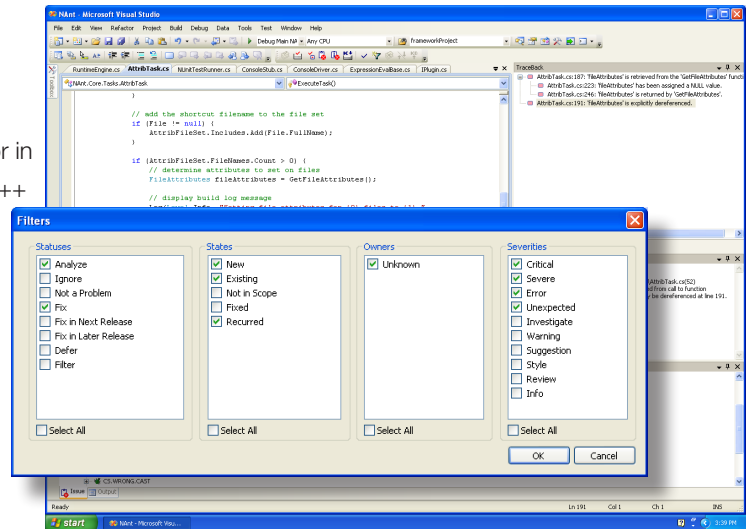
By eliminating code defects early in the development process, Klocwork Insight helps organizations accelerate development, reduce costs, create a better implementation process and deliver cleaner, better code.

// TIGHT INTEGRATION WITH VISUAL STUDIO

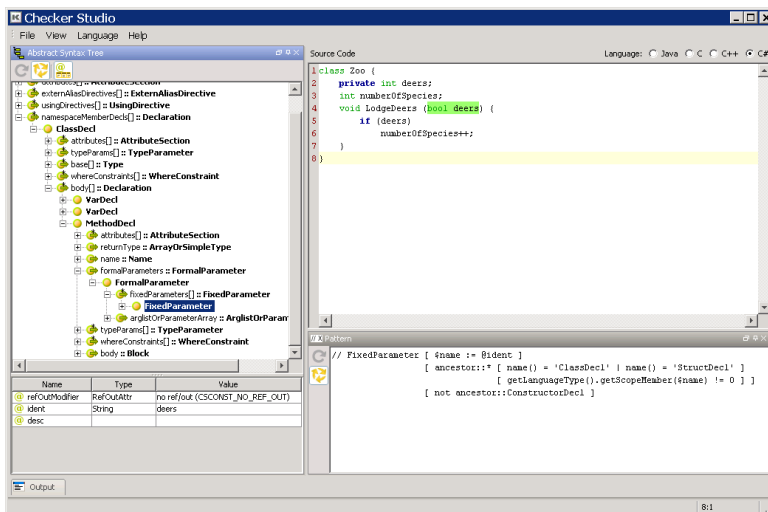
Klocwork for C# in Visual Studio supports fast, accurate analysis for C# projects within Visual Studio 2008, 2005, .NET 2003 and .NET 2002. Klocwork for C# can be used alone for C# projects or in tandem with Klocwork for C/C++ in Visual Studio to analyze C/C++ solutions that contain C# projects.

All reported issues found by Klocwork can be managed through a flexible issue window that allows you to:

- filter detected issues by the active source file
- group issues by file, severity or category
- customize your grouping order



// FULLY CUSTOMIZABLE ANALYSIS



Customers have the flexibility to extend the out-of-the-box library of checkers by creating custom C# checkers to meet their unique organizational, regulatory or code base requirements. This capability is delivered through Klocwork Checker Studio, a robust GUI-based extensibility environment that allows developers to cost-effectively design, develop and deploy custom analysis capabilities that query the code's Abstract Syntax Tree (AST).

// PROVEN SOURCE CODE ANALYSIS

Klocwork is an enterprise software company providing automated source code analysis software products that automate security vulnerability and quality risk assessment, remediation and measurement for C#, C, C++ and Java software. More than 300 organizations have integrated Klocwork's automated source code analysis tools into their software development process in order to ensure their code is free of mission-critical flaws while freeing their developers to focus on what they do best – innovate.

Contact Klocwork for more information at www.klocwork.com or info@klocwork.com.