CODESONAR

PRODUCT DATASHEET

Static Analysis and Static Application Security Testing

CodeSonar empowers teams to quickly analyze and validate the code – source and/or binary – identifying serious vulnerabilities or bugs that cause system failures, poor reliability, system breaches, or unsafe conditions.

CodeSonar finds more significant defects than other tools, through our innovations in concurrency analysis, tainted dataflow analysis, and comprehensive checkers.

Enjoy the Benefits of the Deepest Static Analysis

Employ Sophisticated Algorithms

CodeSonar performs a unified dataflow and symbolic execution analysis that examines the computation of the entire program. The approach does not rely on pattern matching or similar approximations. CodeSonar's deeper analysis naturally finds defects with new or unusual patterns.

Comply with Coding Standards

CodeSonar supports compliance with standards like *MISRA C:2012*, *IS0-26262*, *DO-178B*, US-CERT's *Build Security In*, and MITRE'S *CWE.*

Analyze Millions of Lines of Code

CodeSonar can perform a whole-program analysis on 10M+ lines of code. Once an initial baseline analysis has been performed, CodeSonar's incremental analysis capability makes it fast to analyze daily changes to your codebase. The anlaysis can run in parallel to take best advantage of multi-core environments.

Analyze Third-Party Code

CodeSonar's Integrated Binary Analysis finds security vulnerabilities from libraries or other third-party code without access to source code.

Improve Your Efficiency

Collaborate with Teams

Automation features enable large teams to work together in a coordinated way. For example, it's easy to manage warnings across different project versions or development branches. A Python API supports customization & integration with other tools.

View Quality Trends

Graphs display data to help you manage development and testing efforts.

Software Architecture Visualization

Visualizing your code makes it easy to uncover and understand relationships between different elements in the code. Visual Taint Analysis allows you to quickly spot the source of potentially dangerous information flows.

Reduce the Cost of Development

Identifying and eliminating defects throughout the development cycle will help you ship on-time without business risks and liabilities.

Customize Your Analysis

Custom Checks

New checks can be created easily with the included C API. Many built-in checks can be configured according to local requirements.

Custom Metrics

Out of the box, CodeSonar can compute N different code metrics. You can also use the API to define custom metrics.

"CodeSonar does a better job of finding the more serious problems, which are often buried deep in the code and sometimes hidden by unusual programming constructs that are hard for other static-analysis tools to parse."

– GE Aviation

"We were impressed by the depth of CodeSonar's analysis."

– Vivante

"The automated analysis provides a huge amount of leverage in a cost-effective way."

– Boston Scientific

"We tried the leading static-analysis tools. CodeSonar performed the deepest analysis and provided the most useful information."

– Adaptive Digital Systems

"Especially good at inter-procedural analysis. It can be slow on large code bases, but is quite thorough and accurate. Highly recommended."

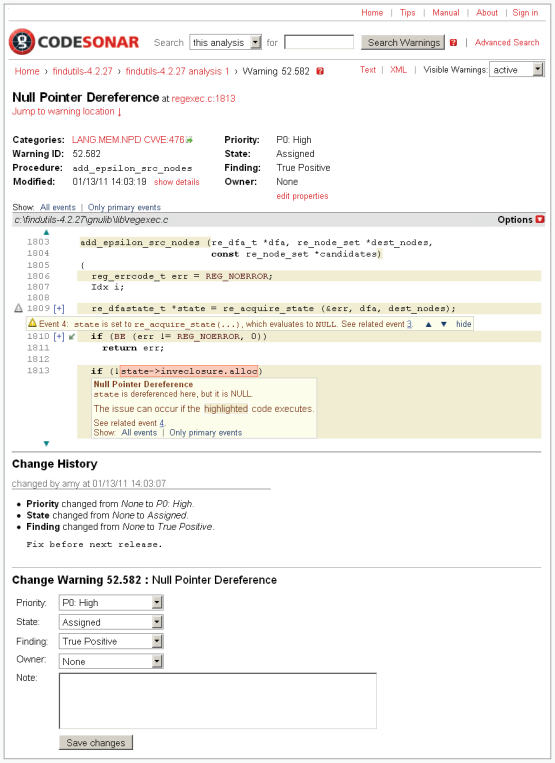
– Gerard Holzmann
SPIN Model Checker Creator

"In the last six years, we assessed and used several static-analysis tools. We assessed CodeSonar and we decided to purchase it because it gives valuable results easily and quickly."

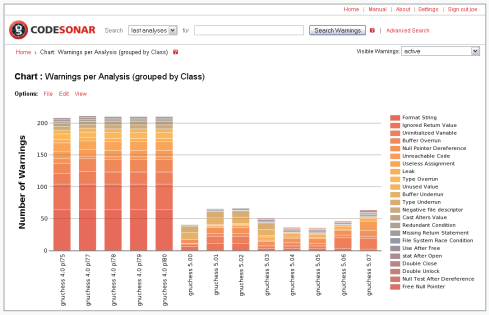
– Électricité de France

CODESONAR®

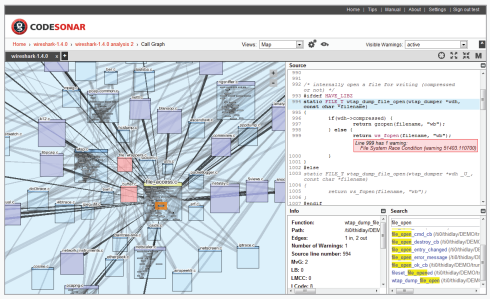
Code Analysis for Zero-Tolerance Defect Environments



See the path to each flaw and how it can occur.



See quality trends by comparing analysis runs. Find out what types of defects are being introduced.



Understand your code with GrammaTech's award-winning software architecture visualization.

Some of the Checks

Security Vulnerabilities

- Buffer Overrun
- Uninitialized Variable
- Free Non-Heap Variable
- Use After Free
- Double Free/Close
- Format String Vulnerability
- Return Pointer to Local

Reliability Issues

- Data Race
- Deadlock
- Null-Pointer Dereference
- Division by Zero
- Double Close
- Dangerous Function Cast
- Resource Leak

Technical Highlights

- Symbolic execution engine
- Scalable
- Incremental analysis capability
- Browser-based user interface
- Management reports
- Extensible analysis engine
- Integrates with other tools
- Easy setup requires no changes to build environment

Free Trial

GrammaTech provides a cost-free means to evaluate CodeSonar on your own code so you can compare the results with those reported by other vendors. Request an evaluation copy at http://www.grammatech.com/free-trial

About GrammaTech

GrammaTech's tools are used by software developers worldwide, spanning a myriad of embedded software industries including avionics, government, medical, military, industrial control, and other applications where reliability and security are paramount. Originally spun out of Cornell's computer science labs, GrammaTech is now both a leading research center for software security and a commercial vendor of software-assurance tools and advanced cyber-security solutions. With both static and dynamic analysis tools that analyze source code as well as binary executables, GrammaTech continues to advance the science of superior software analysis, providing technology for developers to produce safer software.

System Requirements

Supported languages

- C
- C++
- C#
- Java
- Binaries

Supported platforms

- Windows
- Linux

Machine requirements

- 2 GHz CPU
- 2 GB of RAM*
- 15+ GB of free disk space

Supported compilers

- Apple xcode
- ARM RealView
- CodeWarrior
- GCC
- G++
- Green Hills
- HI-TECH
- IAR
- Intel C/C++
- MS Visual Studio
- Renesas
- Sun C/C++
- Texas Instruments CodeComposer
- Wind River
- Most other compilers easily supported

Output formats

- HTML
- XML
- Text (plain text and CSV)

**Requirements to run in serial mode. Parallel mode requires 512MB plus 512MB (and one core) per process.*

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