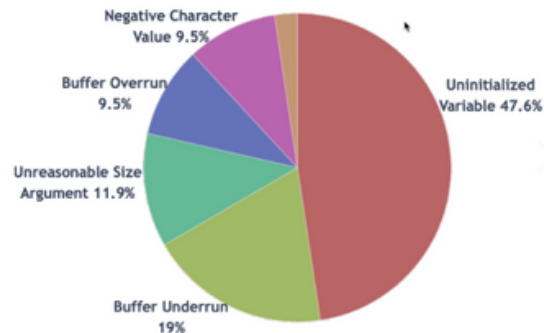# CODESonar®
CODESECURE

Static Application Security Testing

CodeSonar is a static application security testing solution (SAST) that helps you find and understand security and quality defects in your source code.

Accelerate Application Security

Software teams are under constant pressure to deliver more content, with higher complexity, in shorter timeframes, and with increased security and quality. CodeSecure has been a leader in this field for over 15 years, with CodeSonar delivering multi-language capabilities for enterprises where software security and quality matter.

Number of Warnings by Category

Negative Character Value 9.5%
Buffer Overrun 9.5%
Unreasonable Size Argument 11.9%
Buffer Underrun 19%
Uninitialized Variable 47.6%

Key Components

- **Language Support.** CodeSonar supports many popular languages, including C/C++, Java, C#, Kotlin, Python, Go, Rust, JavaScript, and TypeScript.

- **Security.** CodeSonar checks for the use of tainted data, buffer issues, dangerous memory access, integer overflow, and other common security coding errors.

- **Deep Analysis.** CodeSecure builds a highly accurate abstract representation of your application and uses that to examine all the paths through your code to find problems and vulnerabilities. With this deep insight into issues, your team can decide when and how to resolve them with confidence. With this deep insight into issues, your team can decide when and how to resolve them with confidence.

- **Code Quality.** CodeSonar detects memory leaks, dangerous memory access, and other common causes of low-quality code.

- **Scale.** Analyze projects of any size.

- **Integrations.** CodeSonar ships with integrations to most popular development tools. It also supports OASIS SARIF for the exchange of information with other tools in your DevSecOps environment.

- **Code Performance.** CodeSonar detects code that negatively affects performance, such as unnecessary tests for nullness, the creation of redundant objects, or superfluous memory writes.

- **Reporting**. CodeSonar provides built-in reports for standards, such as MISRA, OWASP, DISA STIG and CWE. CodeSonar also includes a custom report builder your organization can use to develop a better understanding of the quality and security of your software projects. Export in PDF, HTML, or XML so you can work the way you want to.

Team Support Comes Standard

Software development is a team sport, and we built CodeSonar to fit right in. Findings are persistent and tracked across analyses, even if the location of the code changes in a file. Annotate, rank, assign, search, and compare warnings in the hub or in your issue tracking software. CodeSonar comes with integrations to a variety of commonly used development tools, ensuring a smooth and rapid adoption for your team.
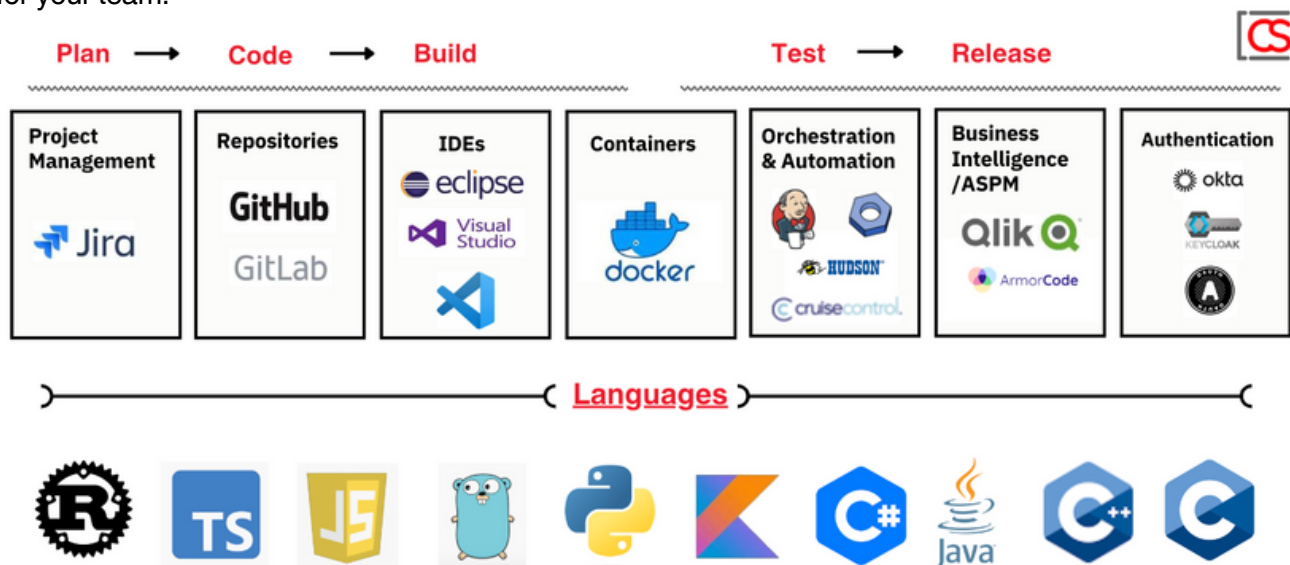
DevSecOps Integration Built-In

Integrating CodeSonar into your software development environment will provide your team with the accurate results they need. CodeSonar works in air-gapped, on-premise, distributed, and cloud-based CI/CD environments for maximum flexibility and scalability. CodeSonar enables the shift to DevSecOps by integrating with the most popular CI tools, such as GitLab, GitHub, Jenkins, and others.

- CodeSonar is highly scalable. It can perform quick scans of a developer's changes, a full scan during an integration build, and anything in between. It can operate in parallel and distributed build environments.

- CodeSonar is available in on-premise deployments, including secure environments. CodeSecure Cloud is available if you have a geographically dispersed team or a mandate to move workloads into the cloud. You can even supply your own cloud infrastructure and manage CodeSecure Cloud yourself.

- With our Qlik and ArmorCode integrations, managers can monitor and report on the state of their multiple projects.

- Developers can view and remediate security issues and quality defects within their preferred tool, and access more detailed information from the CodeSonar hub with just a couple of mouse clicks.

Deep Insight

Finding problems is not sufficient. Developers need to understand a problem's root cause and impact in order to address it efficiently. CodeSonar provides comprehensive code browsing capabilities, helping developers understand and fix issues rapidly.

- See not only the warning, but the path leading up to it, along with a severity score based on the type and likelihood of the error occurring. This allows rapid filtering and root-cause analysis.
- Help about why a warning is a warning is just a mouse click away.
- CodeSonar reports on code metrics and quality trends over time to give the management teams the information they need about project health.
- Visualized results and explore interactive charts inside of the CodeSonar hub, or exported via SARIF, XML, or CSV and analyze your data in third-party applications.

1. **Textual Descriptions:** Easiy, clear, textual descriptions descrive what the problem is.
2. **Path Visualization:** Shaded background annotations explain the defect path.
3. **Call Tree Visualization:** To understand how a function fits in the larger application

The CodeSecure Difference

- **Deep analysis.** CodeSonar's advanced analysis engine handles the largest codebases and helps developers pinpoint defects with greater precision.
- **Multi-language support.** Analyze C/C++, Java, C#, Kotlin, Python, GO, Rust, JavaScript, TypeScript, or binaries.
- **Functional safety.** CodeSonar is pre-qualified for the highest levels of safety for the IEC 61508, ISO 26262, and CENELEC EN 50128 standards. Artifacts for qualification according to DO 178C / DO-330 are also available.
- **Flexible deployment.** On-premises, air-gapped, or cloud-hosted options are available.
- **Binary analysis.** Analyze legacy applications or third-party binaries.

CodeSonar C/C++

Compiler Model Support

- ARM Real View
- Clang
- Gnu
- Microsoft
- Freescale
- CodeWarrior
- IAR
- TASKING
- Wind River
- QNX
- Keil
- Borland
- Intel
- SHARC, Tiger SHARC
- Blackfin
- CodeVision
- MPLAB
- Texas Instruments

Functional Safety

- Pre-qualified for the highest levels of safety for the IEC 61508, ISO 26262 and CENELEC EN 50128 standards.
- Artifacts for qualification according to DO-178C / DO-330 are also available.

Safety and Security Standards Support

- Safety Critical MISRA-C and MISRA-C++, AUTOSAR C++-14, JSF++
- Security : CERT, DISA STIG, OWASP, CWE

CodeSonar Java and C#

Warning Classes

Security

- Warning Classes
- Injections
- Cryptography
- External Entity
- Reference
- Cookies
- Passwords
- LDAP

Quality

- Nullness
- Approximation
- CloseResource
- Dead Code
- BadEq
- EqualsHashCode

Language Support

- C/C++
- Java
- C#
- Kotlin
- Python
- Go
- Rust
- JavaScript
- TypeScrip

IDE Support

- Eclipse
- Microsoft Visual Studio
- Microsoft Visual Studio Code

System Requirements

- **Host**: Windows, Linux, FreeBSD, NetBSD
- **Hardware**: 2+ Cores, 2+GB of RAM, 15+GB of disk
- **Compilers**: Supports most popular and embedded compilers
- **Languages**: C/C++, Java, C#, Kotlin, Python, Go, Rust, JavaScript, TypeScript and Binaries