

DATASHEET

Static Application Security Testing (SAST) Tool for C, C++, C#, Java, and JavaScript

Overview

Klocwork SAST for C, C++, C#, Java, and JavaScript identifies software security, quality, and reliability issues helping to enforce compliance with standards.

Built for enterprise DevOps and DevSecOps, Klocwork scales to projects of any size, integrates with large complex environments, a wide range of developer tools, and provides control, collaboration, and reporting.

Klocwork's Differential Analysis engine provides instant analysis results, while maintaining accuracy, and integrates seamlessly with CI/CD pipelines to automate Continuous Compliance — safeguarding your software from vulnerabilities with every commit.

Key Features

FIND SECURITY VULNERABILITIES WITH SAST

Our security-focused static analysis engine identifies security vulnerabilities as they are introduced – helping to find and fix vulnerabilities early, and provide compliance to internationally and industry recognized security standards, as well as your own organizational requirements.

DEVOPS READY

Klocwork tools are designed with Continuous Integration and Continuous Delivery foremost in our thinking, which makes it easy to include static code analysis as part of your CI/CD pipelines.

Differential Analysis: Using system context data from the Klocwork Server, it is possible to analyze only the files that changed providing differential analysis results as if the entire system had been analyzed and the shortest possible analysis times.

Easy to Automate: Klocwork tools have common command line interfaces, and all defect data is accessible via a REST API using standard output formats, such as XML, JSON, and PDF.

Containerized Builds: Klocwork can be run within containerized and Cloud build systems and supports the provisioning of machine instances as required. Providing maximum flexibility and opportunity to use on-premise or external Cloud services for code analysis.

CONTROL, COLLABORATION, AND REPORTING

The Klocwork Compliance and Application Security Testing (CAST) Portal is a centralized store of analysis data, trends, metrics, and configurations for codebases across the organization — accessed through a web browser.

The dashboard is highly customizable, enabling your developers, managers, and other stakeholders to:

- Define global or project-specific QA and security objectives and rule configurations.
- Control access permissions and approval workflows.
- View trending and metrics data for project quality and compliance.
- Produce compliance and security reports.
- Prioritize defects based on severity, location, and lifecycle.
- Use Smart Rank to assist developers in prioritizing fixes based on defect likelihood, which when combined with issue severity, provides an overall vulnerability risk score.
- Distinguish new issues from legacy code issues.
- Push backlog issues to Change Control systems.
- Import and Integrate Helix QAC findings to the Klocwork SAC to view and manage consolidated analysis results in a single dashboard.

DESIGNED FOR DEVELOPERS

By seamlessly integrating static code analysis with the rest of your development toolset, Klocwork will shift-left defect detection and improve developer adoption as a tool for developer training and increasing productivity.

No User Configuration: Klocwork provides out of the box support for hundreds of compilers and cross-compilers.

Easy to Use: Plugins for popular IDEs (including Microsoft Visual Studio, Eclipse, IntelliJ, and more).

Connected Desktop: Local code changes made using the Klocwork plugins provide immediate differential analysis results within IDEs.

Detailed Feedback and Help: Defects and coding violations are identified by severity, location and risk. Each defect report is further enhanced with detailed traceback information and rich, context-sensitive help and guidance on remediation. Facilitating understanding and learning.

Custom Rules: A graphical custom checker creation tool makes the implementation of project- or organization-specific rules quick and easy — further enriching the learning opportunities.

Architectural Analysis: Klocwork integrates with architectural visualization and enforcement tools like Structure 101 to allow users to further improve the overall quality and maintainability of their codebase through clean and correct dependencies.

Technical Specifications

SUPPORTED LANGUAGES

- | | | |
|-------|------|--------------|
| • C | • C# | • Java |
| • C++ | | • JavaScript |

SUPPORTED FRAMEWORKS

C/C++

- AUTOSAR
- Boost
- Microsoft .Net
- POSIX
- QT
- STL
- WinAPI

C#

- .NET Framework
- .NET Core
- Mono
- Xamarin
- Unity
- Universal Windows Platform

Java

- Android
- Java SE/ EE
- Junit
- Hibernate ORM
- Apache Cocoon
- Apache Commons
- Apache ECS
- Apache Struts
- Apache Tomcat
- log4j
- Eclipse SWT
- JDOM
- Spring Framework
- GWT
- Java Persistence API

- JAX RS
- JAX WS
- ReactiveX
- Vert.x
- WS XML-RPC

JavaScript

- TypeScript
- JSX
- React
- Vue

SUPPORTED CODING STANDARDS

Security:

- CERT (SEI)
- CWE (SANS)
- CWE (SANS) Top 25

- OWASP
- DISA STIG

- PCI DSS
- TS 17961 (ISO/IEC)

Safety:

- MISRA C 2004
- MISRA C 2012

- MISRA C 2012 AMD 1
- MISRA C++ 2008

- AUTOSAR C++ 14
- JSF AV C++
- TS 17961 (ISO/IEC)

Quality:

- NASA's 10 Rules

- Klocwork Quality

Custom:

- Create Your Own Standard

- Create Your Own Rules

SUPPORTED FUNCTIONAL SAFETY STANDARDS

**TÜV-SÜD certified for compliance.*

- IEC 61508*
- ISO 26262*

- EN 50128*
- IEC 62304*

- DO-178B/C

SUPPORTED PLATFORMS

- Windows
- Linux
- Mas OS X

SUPPORTED IDES

- CLion
- Eclipse
- Wind River Workbench
- Microsoft Visual Studio
- Microsoft Visual Studio Code
- QNX Momentics
- Android Studio
- IBM Rational Application Developer
- WebSphere
- JetBrains IntelliJ IDEA

SUPPORTED SOURCE CODE MANAGEMENT SYSTEMS

**Snapshot views are not supported for Base ClearCase
**Subversion 1.4.x is not supported by the Visual Studio plug-ins*

- Base ClearCase 7.x*
- CVS 1.12.x
- Git 1.7.x
- TFS 2010
- Perforce server 2005.2 or higher
- Subversion 1.4.x**, 1.6.x, 1.7.x, 1.8.x

CRITICAL CHECKS

- API Usage Errors
- Dangerous Coding Practices
- Buffer Overflows
- Exposed Fields, Identifier Name Clashes
- Code Complexity
- Code Maintainability Issues
- Concurrent Data Access Violations
- Concurrency Issues
- Cross-Site Request Forgery (CSRF) Vulnerabilities
- Cross-Site Scripting (XSS) Vulnerabilities
- Dangerous Implicit Conversions
- Dead Code
- Error Handling Issues
- Hard-Coded Credentials
- Improper Certificate Validation
- Improper Encapsulation
- Incorrect Error Handling
- Indeterminate Value Warnings
- Information Leakage
- Invalid Arithmetic Operations
- Maintainability Issues
- Memory — Corruptions
- Memory — Illegal Accesses
- Missing Authentication for Critical Function
- Missing Authorization Checks
- No Configuration for a Critical Resource
- No Configuration for a Protect Resource
- Null Pointer Dereferences
- Object-oriented Programming Issues
- Path Manipulation
- Performance Issues
- Portability Issues
- Possible Runtime Failures
- Process and Path Injection
- Pseudorandom Number Generation Issues
- Redundant Code
- Resource Leaks
- Rule Violations
- Security Best Practices Violations
- Security Misconfigurations
- Stylistic Issues
- SQL Injections
- Suspicious Code Practices
- Suspicious Encapsulation
- Suspicious Scoping
- Uninitialized Members, Use of Uninitialized Fields and Variables
- Unnecessary Code
- Unreachable Code
- Unsafe Code Practices
- Unused Code
- Unused Local Variable
- Unvalidated User Input, Path/File/Process Injection, Tainted Data
- Use of Freed Resources
- Use of Hard-Coded Credentials
- Use of ldap Anonymous Bind
- Use of Weak Cryptographic Algorithm
- Vulnerable Coding Practices
- XML External Entity Attack
- XXE Vulnerabilities

SUPPORTED C/C++ COMPILERS

- Analog Devices Blackfin and TigerSHARC
- Archelon
- Archelon CSR Kalimba
- ARM CC
- ARM TI tms470
- CADUL C for Intel 80X86
- CEVA (NVIDIA)
- Clang
- CodeWarrior Freescale S12
- Compiler caching tools
- Cosmic
- Embarcadero
- Fujitsu FR
- GNU
- Green Hills
- Hexagon Tools
- HI-CROSS+ Motorola HC16
- HI-TECH C
- Hitachi ch38
- HiveCC
- IAR 78K
- IAR 8051
- IAR ARM
- IAR Atmel AVR
- IAR AVR32
- IAR CR16C
- IAR Hitachi H8
- IAR M16C
- IAR M32C
- IAR MAXQ
- IAR MSP430
- IAR NEC V850
- IAR Renesas R32C
- IAR Renesas RX210
- IAR RH850
- IAR RL78
- IAR SH
- IAR STM8
- IBM XL
- ImageCraft AVR
- ImageCraft Intel
- ImageCraft M8C
- Intel iC-386
- Keil CA51, C166 and C251
- Marvell
- MetaWare
- Metrowerks CodeWarrior
- Microchip MPLAB C18
- Microchip MPLAB pic24
- Microchip MPLAB pic32
- Microchip MPLAB XC8 C
- Microchip MPLAB XC16
- Microsoft Visual Studio
- Microtec
- Microware Ultra C for OS-9
- Mono Headset SDK
- Motorola DSP563
- Nintendo Cafe Platform
- Nvidia CUDA
- NXP StarCore Freescale
- Panasonic
- Panasonic MN101E/MN101L
- Paradigm
- Plan 9
- QNX qcc
- Renesas 78K0R
- Renesas CC-RL RL78
- Renesas CX
- Renesas M16C
- Renesas M32R
- Renesas R32C
- Renesas R8C
- Renesas RH850
- Renesas RX
- Renesas SuperH
- Renesas V850
- Rowley Crossworks MSP430
- Sony SN Systems PS2, PS3 and PSVita
- Sony Orbis Clang PS4
- Sun Studio
- Synopsys ARC MetaWare
- Target Chess
- Tasking 68K
- Tasking ARM
- Tasking Classic C166
- Tasking DSP56X
- Tasking IFX SLE88
- Tasking SLE88
- Tasking Tricore
- Tasking VX C166
- Tensilica Xtensa
- TI ARP32
- TI msp430
- TI tms320C55x
- TI tms320C3x
- TI tms320C4x
- TI tms320c28x
- TI tms320c6x
- TriMedia tmcc
- Watcom
- WinAVR
- Wind River Diab
- Wind River GCC
- ZiLOG eZ80

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perforce.com/products/kw/free-static-code-analyzer-trial