perforce
Klocwork

Highly Scalable Static Analysis (SAST) Tool for Mission-Critical Systems

Perforce Klocwork is a static analysis / SAST tool for C, C++, C#, Java, JavaScript, Python, and Kotlin. It identifies software security, quality, and reliability issues and helps enforce standards compliance for large-scale, mission-critical systems.

Built for enterprise DevOps and DevSecOps, Klocwork scales efficiently for projects of any size; integrates with large, complex build environments and a wide range of developer tools; and provides control, collaboration, and reporting across the entire organization.

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 rules identify complex security vulnerabilities as they are introduced — helping developers find and fix vulnerabilities early and providing compliance to internationally and industry recognized security standards, as well as your own organization-specific requirements.

Functional-Safety Compliance at Scale

Klocwork also provides coverage of safety-related coding guidelines, TÜV certification and qualification materials, making it the perfect engine to satisfy functional safety requirements for very large codebases; including ISO 26262, DO-178C, and IEC 61508.

Project Streams

Project Streams provide easy management of shared code bases that have multiple variants or branches by simplifying project rule configuration, issue management, defect citing, reporting, and efficient data storage of analysis data.

Creating streams provides the following benefits:

- Assign a simple project rule configuration to all variants.
- Issues common to multiple variants are automatically kept in sync and only require citing once.
- Easily identify identical issues across multiple streams and issues unique to a specific stream.
- Generate reports on individual streams for compliance, functional safety, or other evidential purposes.
- More convenient organization and efficient storage of analysis data.

Risk Prioritization

Prioritize coding issues based on severity of risk. Klocwork helps you target the most critical defects using filters, suppressions, and baselines. It delivers accurate diagnostics and actionable results — enabling you to fix the most important issues first.

DevOps Ready

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

Differential Analysis: Using system context data from the Perforce Validate 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 in Validate is accessible via an API.

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

perforce Validate

Perforce Validate: Control, Collaboration, and Reporting

Perforce Validate is a centralized store of analysis data, trends, metrics, and configurations for code bases across the organization — accessed through a web browser.

The Validate platform 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.

Designed for Developers

By seamlessly integrating static 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 with 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.

Technical Specifications

Supported Languages

- C
- C++
- C#
- Java
- JavaScript
- Python
- Kotlin
- Rust

Supported Coding Standards

Security

- CERT C
- CERTC++
- CERT Java
- CWE
- CWE Top 25
- HKMC Secure C
- HKMC Secure C++
- OWASP Top 10
- DISA STIG v6
- PCI DSS
- TS 17961 (ISO/IEC)

Safety

- MISRA C:2025
- MISRA C:2023
- MISRA C:2012
- MISRA C:2004
- MISRA C++:2023
- MISRA C++:2008
- AUTOSAR C++14
- JSF AV C++

Quality

- NASA's 10 Rules
- Klocwork Quality

Custom

- Create Your Own Standard
- Create Your Own Rules

Supported Functional Safety Standards

- DO-178B/C (aviation)
- ISO 26262 (automotive) up to ASIL level D.*
- IEC 61508 (general industry) up to SIL 4.*
- EN 50716 (railways) up to SW-SIL 4.*
- IEC 62304 (medical devices) up to Software Safety Class C.*

Supported Platforms

- Windows
- Linux

Supported IDEs

- CLion
- Eclipse
- Wind River Workbench
- Visual Studio Code
- Microsoft Visual Studio
- QNX Momentics
- Android Studio
- JetBrains IntelliJ IDEA

Try Perforce Klocwork Free

Get started with your free trial of Klocwork today.

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