

Best Static Code Analyzer for Functional Safety and Standards Compliance

For over 35 years, Perforce QAC has been the trusted static code analyzer for safety-critical C and C++ embedded systems.

With its depth and accuracy of inter-procedural dataflow analysis, QAC is the preferred static analysis tool in tightly regulated and safety-critical industries that need to meet rigorous compliance requirements — including automotive, aerospace and defense, rail, and medical devices.

Often, this involves verifying strict compliance with coding standards — such as MISRA® and AUTOSAR — and related functional safety standards, such as ISO 26262.

QAC is certified for safety related software development by TÜV-SÜD, for functional safety standards including IEC 61508, ISO 26262, EN 50716, IEC 60880, and IEC 62304. In addition, QAC is also certified to ISO 9001 and TickITplus Foundation Level, which is one of the most widely accepted standards to ensure that all our processes reflect our commitment to quality.

Key Differentiators of Perforce QAC

- Extensive coverage of major coding standards.
- Comprehensive set of fine-grained diagnostics.
- Accuracy and precision — finds more problems with fewer false positives.
- Project reporting, including pre-packaged standards compliance reports, code quality trends, and metrics.
- Support for analysis both at the developer desktop and server CI/CD pipelines.
- Tight integration with developer toolchain, which includes IDEs, CI/CD automation systems, Perforce P4 version control and Perforce ALM tools.

Perforce QAC Key Features

Depth of Coverage

QAC provides a depth of coverage that gives a more complete coverage of the rules of the major safety and security coding standards for C and C++.

Sound Analysis

QAC's unique Abstract Interpretation algorithms provide sound inter-procedural dataflow analysis, but at speeds never seen with brute-force exhaustive simulation algorithms.

Risk Prioritization

Prioritize coding issues based on severity of risk. QAC helps you to 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.

Development Toolset Integration

Integrate static analysis with the rest of your development toolset. QAC supports the majority of C/C++ compilers. And, you can integrate it with many development tools — including IDEs (such as Microsoft Visual Studio), version control systems (such as P4), and continuous integration build servers (such as Jenkins).

DevOps Ready

QAC 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. Get full CI/CD integration support for QAC with Perforce Validate via delta analysis, and manage results from CI/CD scans to identify any defects introduced by new changes to gate code commits.



Perforce Validate: Control, Collaboration, and Reporting

Perforce Validate is a centralized store of analysis results from QAC. Work beyond the desktop: the Validate platform provides analysis data, trends, and configurations for codebases across the organization. Support extends to analysis jobs running in cloud-based CI pipelines, containerized build tasks, and integrations into various CI/CD platforms via the built-in Web API.

Validate is highly customizable, enabling your team to easily:

- Review the entirety of the code by project and section.
- Manage analysis results and deviations at scale.
- Review project updates and notifications.
- Define project compliance requirements centrally. Verify how compliant the whole codebase is with coding standards and industry best practices, for all variants and build parameters.
- Measure overall code quality through code metrics.
- Monitor developing trends with customizable reports.

Technical Specifications

Supported Languages

- C
- C++

Supported Coding Standards

Safety

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

Security

- CERT C
- CERT C++
- CWE, including CWE Top 25
- ISO/IEC TS 17961 (C Secure)
- HKMC Secure C
- HKMC Secure C++

Quality

- High Integrity C++ (HIC++)

Custom

- Create Your Own Standard
- Create Your Own Rules
- Custom Compliance Module

Supported Languages

*TÜV-SÜD certified for safety-related software development.

- ISO 26262 up to ASIL level D*
- IEC 61508 up to SIL 4*
- EN 50716 up to SW-SIL 4*
- IEC 62304 up to Software Safety Class C*
- IEC 60880*
- DO-330

Supported IDEs

- Eclipse
- Visual Studio
- Visual Studio Code

Try Perforce QAC For Free

Get started with your free trial of Perforce QAC today.



www.perforce.com/products/qac/free-static-code-analyzer-trial