

DATASHEET

Best Static Code Analyzer for Functional Safety and Standards Compliance

For over 30 years, Helix QAC has been the trusted static code analyzer for C and C++ programming languages.

With its depth and accuracy of analysis, Helix QAC is the preferred static code analyzer 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 compliance with coding standards — such as MISRA and AUTOSAR — and functional safety standards, such as ISO 26262.

Helix QAC is certified for safety related software development by TÜV-SÜD, for functional safety standards including IEC 61508, ISO 26262, EN 50128, IEC 60880, and IEC 62304. In addition, Helix QAC is also certified to ISO 9001 and TickIT plus 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 Helix 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 pipelines.
- Tight integration with developer toolchain, which includes IDEs, VCS, CI and ALM tools.
- Integrates with architectural visualization and enforcement tools, like Structure 101.

Helix QAC Key Features

DEPTH OF COVERAGE

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

RISK PRIORITIZATION

Prioritize coding issues based on the severity of risk. Helix 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 code analysis with the rest of your development toolset. Helix QAC supports the majority of compilers and provides the ability to configure analysis settings for projects that use multiple compilers. And, you can integrate it with many development tools — including IDEs (such as Microsoft Visual Studio), version control systems (such as Helix Core), and continuous integration build servers (such as Jenkins).

ISSUE MANAGEMENT AND REPORTING

Perforce Validate, the continuous security and code compliance platform, provides a centralized store of analysis data, trends, and configurations for codebases across the organization, providing a single pane of glass for all Perforce Static Analysis products — including Helix QAC. Results from a Helix QAC analysis are uploaded to Validate and accessed through a web browser.

In addition, Validate is highly customizable, enabling developers, managers, and stakeholders to:

- Define global or project-specific QA and compliance rule configurations like CERT or MISRA.
- Control access permissions and approval workflows.
- View trending data for project quality and compliance.
- Produce compliance reports for how well the code or project conforms to coding standards and industry best practices.
- Prioritize defects based on severity, location, and lifecycle.
- Report variants, branches, and releases for a single codebase.
- Web/REST API functionality for integration with other tools and processes across the SDLC.

Flexible Deployment and Analysis Options

Helix QAC is designed with full Continuous Integration and Continuous Delivery support, which makes it easy to include static analysis as part of your CI/CD pipelines.

In conjunction with Validate, developers can manage results from CI/CD analysis to identify potential defects introduced by new changes relative to the last full analysis —enabling organizations to identify and communicate errors faster, without waiting for nightly builds.

In addition, Helix QAC provides maximum deployment and analysis flexibility, so that teams can work beyond the desktop. Results are integrated and published to Validate in a centralized store of analysis data, trends, metrics, and more for users to access across the organization.

Technical Specifications

SUPPORTED LANGUAGES

- C
- C++

SUPPORTED CODING STANDARDS

Safety:

- MISRA C:2023
- MISRA C 2012 (including AMD4)
- 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)

Quality:

- High Integrity C++ (HIC++)

Custom:

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

SUPPORTED FUNCTIONAL SAFETY STANDARDS

*TÜV-SÜD certified for safety related software development.

- ISO 26262 up to ASIL level D*
- IEC 61508 up to SIL 4*
- EN 50128 up to SW-SIL 4*
- IEC 62304 up to Software Safety Class C*
- IEC 60880*
- D0330

SUPPORTED IDES

- Eclipse
- Visual Studio
- Visual Studio Code

Try Helix QAC For Free

Get started with your free trial of Helix QAC today.

TRY FREE

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