

What's New in Cantata 24.04?

Cantata 24.04 is available from April 2024. The main feature of this release is its **code-centred** approach to create unit and integration tests within the code editor in C/C++ even faster and more efficiently.

This document details all the most important changes in Cantata version 24.04.

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Introduction

Cantata 24.04, available since April 2024, revolutionizes software testing with pioneering features.

Embracing the latest standards in C++ with comprehensive support for C++20, Cantata 24.04 enhances code-centric test editing, facilitating seamless test case generation and management directly within the code editor. This includes auto-completion features, streamlined test case generation, and the ability to run tests directly from the code editor, boosting productivity and efficiency.

Additionally, Cantata 24.04 introduces improvements in project creation, documentation accessibility, and performance enhancements.

Overall, the changes and improvements in Cantata 24.04 focus on enhancing user productivity, providing better support for modern C++ standards and third-party tools, improving documentation and accessibility, and addressing various performance and stability issues. The code-centric test editing features represent a significant step forward in streamlining the testing workflow and improving developer efficiency.

New Complementary Tool:

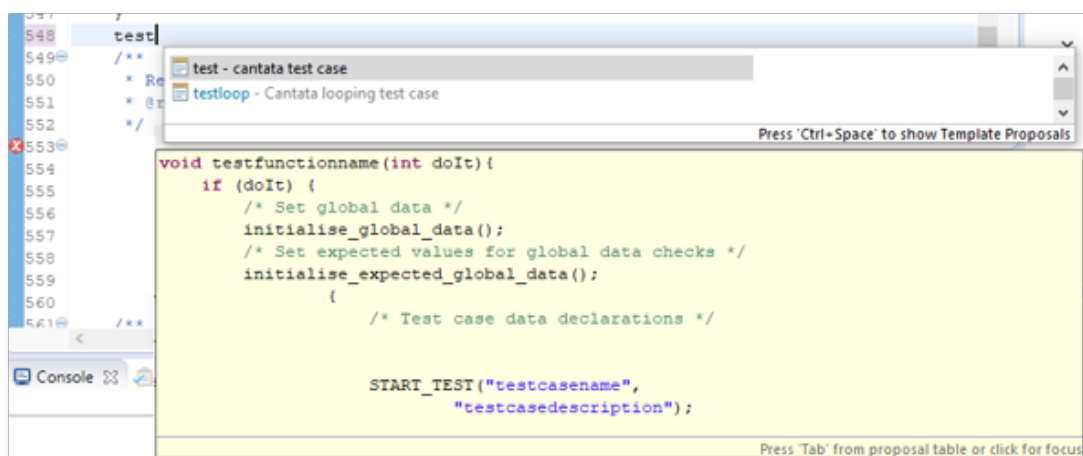


Alongside Cantata 24.04, and 100% compatible with it, is a new tool: Cantata Hybrid. This generates Cantata test results and combined code coverage evidence from running unchanged GoogleTest® suites. Learn more at: www.qa-systems.com/cantatahybrid

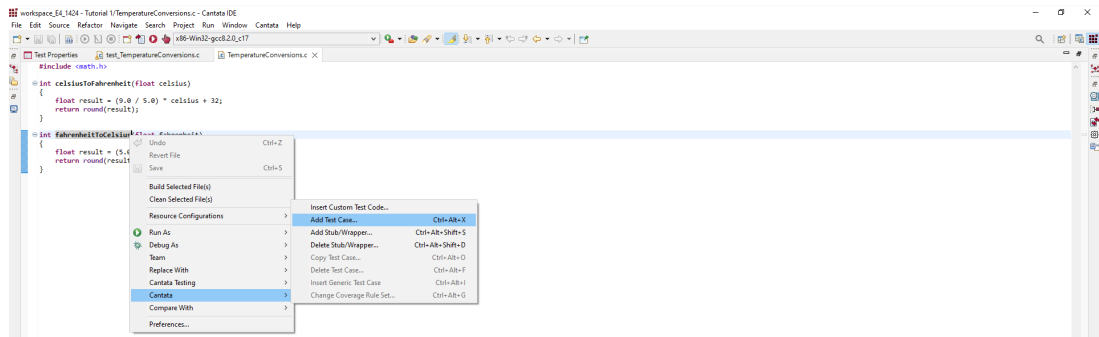
Code-centric Test Editing

Cantata 24.04 brings several enhancements aimed at improving productivity and efficiency when editing tests directly within the code editor. These improvements aim to make the testing process more efficient and seamless, reducing context switching and improving developer productivity.

- Auto-completion features have been added for test cases, static accesses, EXPECTED_CALLS, and EXPECT_CALL directives, reducing typing effort and improving code consistency.



- Test case generation, stub/wrapper generation and removal, and adding exception handling can now be done directly from the code editor (CDT), streamlining the testing workflow.

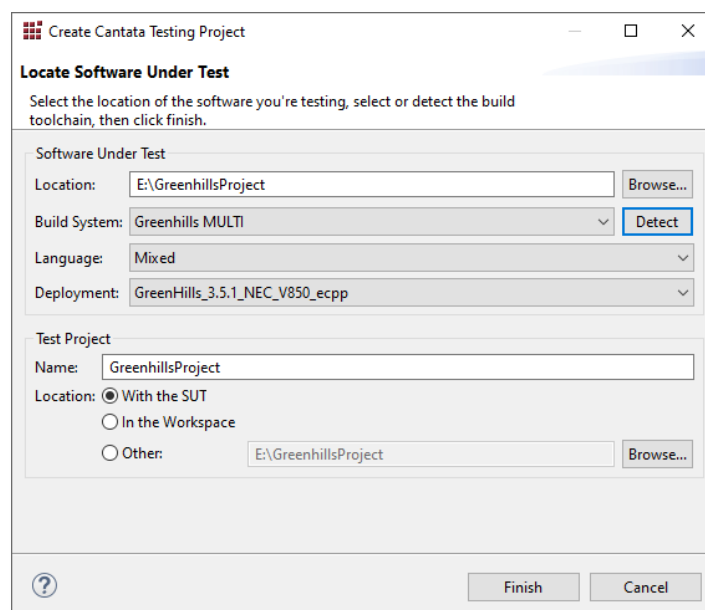


- Users can also run tests directly from the code editor, without having to switch between different views or windows.
- CSV import/export for looping test cases and code templates for common directive pairs and test case templates further enhance the code-centric testing experience.

Project Creation Improvements

The project creation feature has been enhanced to better support third-party IDE projects, making it easier to integrate Cantata with existing development environments.

Improvements have been made to project selection dialogs, making it more user-friendly and easier to navigate, especially when dealing with large numbers of projects. Better handling of makefiles and command-line usage has been implemented, providing more flexibility and control over project creation.



New Documentation System

The Cantata user documentation and all useful published documents have been integrated into a new (MKdocs) documentation system. The Cantata installation includes a local copy of the documentation system, viewable in any web browser. An online copy with the latest published documentation is also available for all valid licenses at: <https://support.qa-systems.com/docs>. This new documentation systems makes it easier for users to access and navigate all relevant Cantata documentation, regardless of their location or internet connectivity, and includes a global search function.

QA SYSTEMS Welcome 🔍 Search

Cantata 24.04 Documentation

- Welcome
- Datasheet
- Hybrid Datasheet
- Installation Guide
- Licensing Guide
- Initial Setup
- First Use
- User Guide
- Hybrid User Guide
- Guide to Testing
- Tutorials and Examples
- Release Notes
- Videos
- What's New
- Reference Manual
 - AutoTest
 - Supporting Tools
 - Test Harness
 - Coverage Analysis
 - Testability Instrumentation
 - Static Metrics
 - Library Builder
 - Parse Options
 - Appendices
- Feature Briefs
- Usage
- Tool Integration
- White Papers
- Standards Briefings
- Safety Manual
- Team Reporting (add on)

CANTATA Documentation System

This comprehensive repository is your essential guide to navigating the Cantata tool effectively. Whether you're a seasoned user or just embarking on your Cantata journey, these meticulously crafted documents are here to assist you in harnessing the full power of Cantata for your testing and verification needs.

This site is a complete online set of web pages containing the full documentation set for Cantata v24.04.

What's Inside?

Dive into a rich spectrum of resources covering various topics tailored to your specific needs. From datasheets and installation guides to licensing details, initial setup instructions, and user guides, the library is a one-stop destination. Explore release notes for the latest updates, reference manuals for in-depth insights, and standard and feature briefs for specific functionalities. Additionally, whitepapers offer valuable perspectives, and safety manuals provide guidance for incorporating Cantata into safety-related contexts.

How Can These Documents Help You?

Whether you're seeking step-by-step instructions, specific technical details, or best practices, our documentation is designed to cater to your needs. Gain clarity on everything from the initial setup process to advanced features and integrations. If you ever find yourself facing a question or seeking guidance, rest assured that these documents are here to assist you at every step.

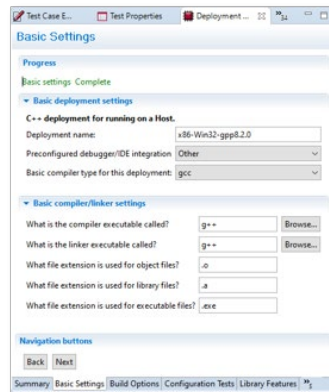
At QA Systems, we're committed to your success. These documents are not just files; they are your partners in understanding and leveraging Cantata effectively. Explore, learn, and optimize your Cantata experience with the wealth of knowledge at your fingertips.

Thank you for choosing Cantata!

⚠️ Please refer to the **Cantata Safety Manual** for guidance on how to use the Cantata tool in a safety related context, and to meet the requirements of the independent tool certification. It should be read in conjunction with this Cantata Documentation, and the relevant **Cantata Standard Briefing paper**.

Embedded Target Support

Cantata continues to provide support for a wide range of embedded target platforms. In Cantata 24.04 the library builder has been enhanced to automatically detect settings for preprocessors and archivers. These more automated detection settings require less input from users and make deploying Cantata to target platforms easier.



Performance Improvements

Various performance improvements have been made in Cantata 24.04, including speed improvements for the Eclipse UI, parse tools, and handling of large nested loops. These improvements aim to enhance the overall responsiveness and efficiency of the tool, improving the user experience, especially when working with large and complex projects.

CPPGETCOV Component Update

The CPPGETCOV Core Product component has been updated to support multiple coverage (.cov) files to enable easier reporting over multiple test runs.

C++20 Support

Cantata 24.04 now enables users to take advantage of the latest language features and improvements introduced in the C++20 standard.

This includes new language constructs, library additions, and performance optimizations. Users can now write and test code using the latest C++20 features, ensuring their projects remain up to date with the latest standards.

Bug Fixes

In addition to the new features and improvements, Cantata 24.04 includes a significant number of bug fixes, addressing issues related to code instrumentation, test script generation, compiler compatibility, and more. These bug fixes aim to improve the overall stability and reliability the tool, ensuring a smoother and more robust testing experience for users.

Updated Platform Versions Support

As with every version of Cantata, support for platforms has been updated.

Cantata is tightly integrated with leading Integrated Development Environments which are Built-on-Eclipse®, and toolchains available as Eclipse-Ready® plug-ins. Cantata 24.04 is built on the Eclipse 2023-12 release (Eclipse 4.30) and is also available to install as a 64-bit Eclipse-Ready plug-in set for versions from Neon (4.6) up to Eclipse 2023-12 (4.30).

Cantata 24.04 updates the supported GNU GCC compiler versions up to 8.2.x on Windows and up to 13.2.x on Linux.

Cantata 24.04 updates the supported Microsoft Visual Studio version to 2019.

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