

CANTATA

What's New in Cantata 7.1



Cantata 7.1, available from October 2016, provides significant new functionality and fixes on top of the major 7.0 release of Cantata. This document outlines the most important changes in Cantata version 7.1.

Introduction

The Cantata 7.1 release is available from October 2016. Building on the major new functionality available in the 7.0 release, 7.1 provides significant new capabilities, as well as a wide range of enhancements and fixes. You may also wish to refer to What's New in Cantata 7.0.

The full set of changes is documented in the Release Notes which track all changes in Cantata since version 4.1. The most important changes are highlighted in the sections below.

The Cantata Team Reporting add-on tool has also been updated for use with Cantata 7.1 to enable teams to work more effectively.

Cantata Deployment Wizard & Editor

Cantata 7.1 introduces a new Cantata deployment wizard and editor, which together make deploying Cantata for use in any target environment, simple for end users.

Cantata Deployment Wizard

Create a Cantata deployment project

Type a name for the new project, and choose a zip file to import or select settings to create a completely new deployment

Project name:

Use default location

Location:

Use an existing deployment zip file

Location:

Create a new deployment using software on the current machine

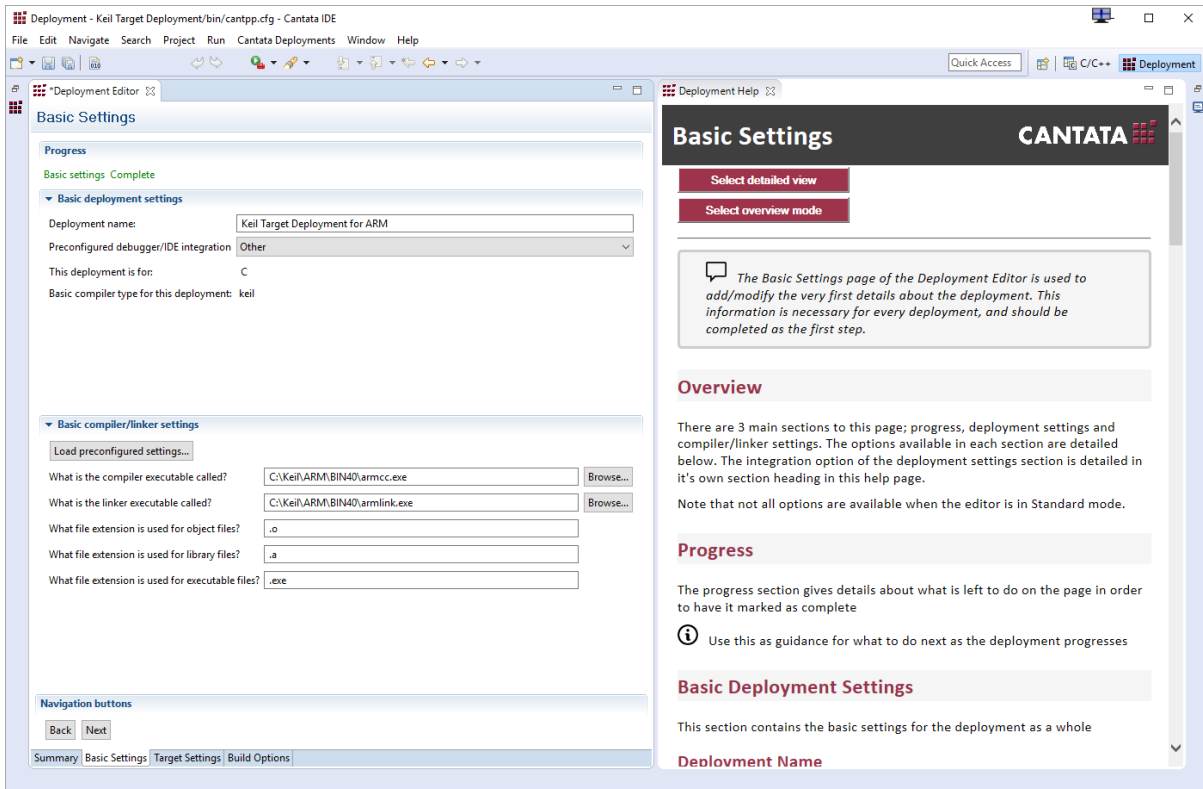
Choose the language to deploy Cantata for: C C++

Choose the item from the list that matches the compiler best

Choose the output mechanism for your target

Buffered output mechanism
Standard printf routine
Standard putc routine
Standard putchar routine

A dedicated deployment Eclipse Perspective provides a full deployment editor with standard, advanced and expert modes. These make it easy to rapidly create a standard deployment, and to fine tune deployments for your specific needs. The editor comes with comprehensive contextual help for new users, and all the flexibility required by experienced users.



Tabbed Cantata deployment editor with contextual help

Once set up for target environments, Cantata deployments can be re-used by engineers for new projects with a single click.

Cantata 7.1 deployments are no longer dependent on the availability of Standard C Library functions, as implementations are provided automatically where not available.

Downloading the Cantata test executable to the target, running it and directing the test results back to the host is easier in version 7.1. Scripts to automate these steps are available from your supplier as part of a deployment service, and a library of example debugger integration scripts is included free of charge in the Deployment Editor.

Cantata Trace

Bi-directional traceability of requirements or test plans with tests is required by all safety related standards. Cantata Trace makes it faster and cheaper for users to satisfy this bi-directional traceability.

An intuitive drag-and-drop interface makes it easy to assign relationships and integrates with external Requirements Management Tools (RMT). Requirements or test plan information is imported from a RMT, and stored by Cantata on a server so that information can be accessed and synchronized across multiple workspaces.



© All Copyright and Trademarks of their respective owners are acknowledged

Cantata 7.1 improves requirement set import and export capabilities, adding ReqIF (Requirements Interchange Format) support as well as full integrations with RMTs: DOORs®, PTC Integrity®, Polarion REQUIREMENTS® and Intland codeBeamer®.

Cantata 7.1 provides colour coded visibility of changed requirements since last the last time that set of requirements was imported. As well as providing the option to select only the requirements that have changed. This makes it easy to focus tracing on the just changed requirements.

The screenshot shows the 'Trace' window in Cantata. It has tabs for 'Selection', 'Requirement Trace', and 'Test Trace'. Under 'Requirement selection', there are dropdowns for 'Imported Requirement set:' (DOORS Example v2, imported: ' 15-Sep-2016 14:55:29') and 'Compare to Requirement set:' (DOORS Example v1, imported: ' 15-Sep-2016 14:55:13'). There are buttons for 'Search:', 'Select All', 'Deselect All', and 'Select Changed'. A 'Select new and modified' button is also visible. The main area is a tree view of requirements:

- 1: 1 Deliver Infusion
 - 2: The pump channel shall deliver an infusion upon receipt of a "begin infusion" command only when the pump channel has been armed and cont
 - 17: A pump channel must be armed prior to the delivery of an infusion (highlighted in red)
- 3: 2 Select Pump Channel
 - 18: The infusion pump shall support six separate pump channels.
 - 4: The clinical application shall select one of six pump channels to program.
- 5: 3 Set Infusion Parameters
 - 23: New Requirement (highlighted in green)
 - 19: The clinical application shall accept only one prescription at a time.
 - 6: A prescription shall be composed of a delivery rate and total volume delivered.
 - 20: A prescription shall persist in the clinical application until it is cleared or reprogrammed.
- 7: 4 Validate Infusion Parameters
 - 8: Upon receipt of a "load prescription" command, the pump channel shall compare a prescription to rate and volume limits and commit the pres
 - 13: Each pump channel shall have a minimum rate of 1 unit per minute.
 - 14: Each pump channel shall have a maximum rate of 5 units per minute.
 - 15: Each pump channel shall have a minimum volume of 1 unit.
 - 16: Each pump channel shall have a maximum volume of 500 units (highlighted in orange)
- 21: Software Architecture (highlighted in red)
 - 22: The Infusion Pump application shall consist of a clinical application subsystem, 6 pump channels, a power management subsystem, a diagnosti

Individual requirements added (green), deleted (red) and changed (orange).

Platform and Toolchain Support

Eclipse® Environments



Cantata is tightly integrated with leading Integrated Development Environments Built-on-Eclipse and toolchains available as Eclipse Ready plug-ins.

Cantata 7.1 is built on the Mars (4.5.2) release, and is also available to install as an Eclipse-Ready plug-in set for releases Galileo (3.5) up to the recently released Neon (4.6), giving instant access to the ecosystem's latest rich set of plug-and-play tool integrations (e.g. SCM, CI tools).

C11 Support

Cantata 7.1 has added full support for the C11 language standard.

GNU GCC/g++ compiler Support

Support for the GNU GCC and g++ compilers has been extended to support up to and including version 5.4.

More Flexible Instrumentation

Cantata 7.1 instrumentation is more flexible with new options to control code coverage instrumentation separately from testability instrumentation directly from within individual project properties. This makes it simple to switch between the same test run both with and without code coverage, as required by some safety standards.

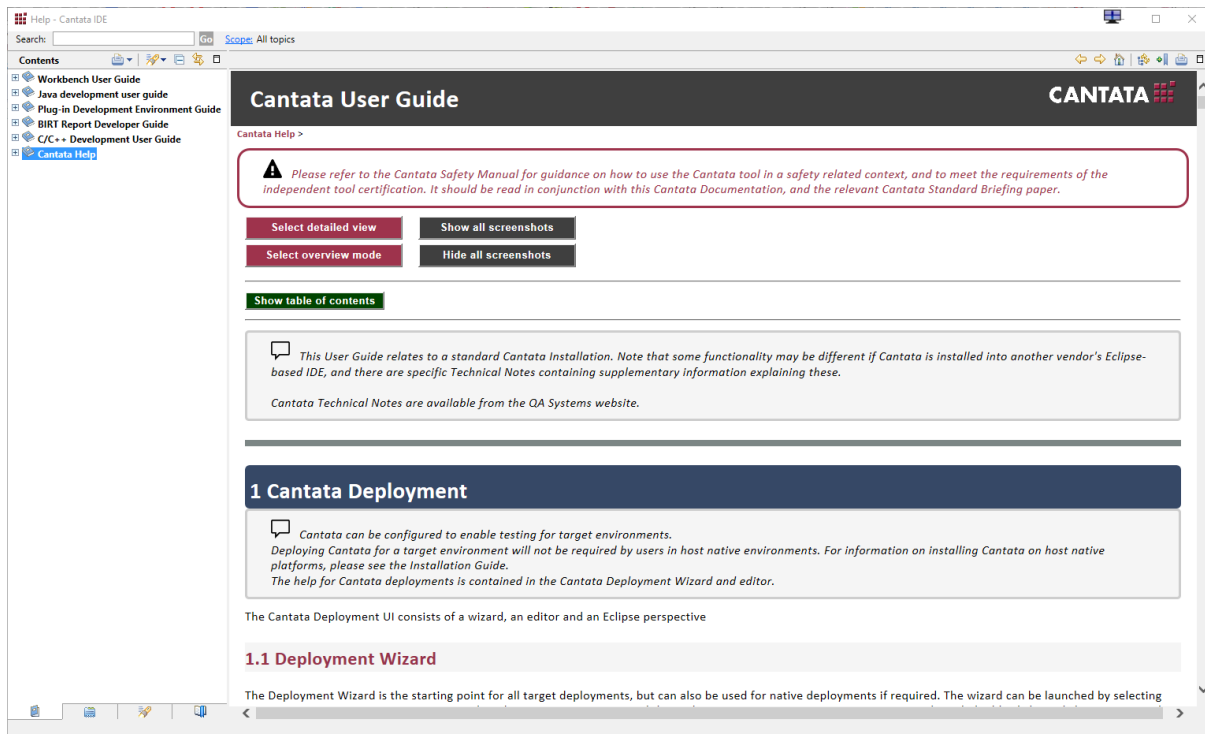
Certification

Cantata 7.0 has been independently certified by SGS TÜV SAAR to the highest level of integrity for the main software safety related standards:

- > ISO 26262 (Automotive)
- > IEC 61508 (Industrial)
- > EN 5012.8 (Railways)
- > IEC 62304 (Medical Devices)
- > IEC 60880 (Nuclear)

As with previous versions, once released, Cantata 7.1 will also be independently certified by SGS TÜV SAAR for the above software safety related standards by the end of 2016, and an updated full tool qualification kit will also be made available for the avionics standards DO-178B/C and DO-330.

Improved Help Documentation



The Cantata help documentation in version 7.1 has been completely revised. New sections have been added to address important software testing concepts and solutions. Help documentation is now completely included within the Cantata Eclipse® GUI, and has been made easier to navigate. Separate HTML files are also available to facilitate on-line translation.