Stateful. Event-driven. Real-time.

DEVELOPING IoT AND EMBEDDED APPLICATIONS THE EFFICIENT WAY

Industries are generating thousands, even millions, of new lines of code in their complex real-time systems via model-based designs.

Additionally, both new and legacy systems require enhancements to capture and react to the plethora of data being created by both people and devices, every second.

In order to gain a competitive advantage, companies need powerful tools to support and scale their embedded and IoT applications with strategic uses of these model-based designs.

Companies that adopt new technologies and are able to react to this data to enhance the customer experience, gain a significant edge on their competitors.

Imagine a refrigerator telling you that you're out of milk. Or, a device that tells your doctor exactly where and when your heart has an irregular heartbeat.

How about a coffee maker that brews you a fresh cup even when you're sleeping in? So, how are developers creating these applications that need to be integrated with both real-time embedded systems, while multi-tasking with external devices?

Embedded systems developers are looking for a developer tool to deliver secure, high-quality production code with quick, agile methodologies allowing them to react to new business requirements while minimizing maintenance cost of long-lived applications running on many different device preferences of their users.

Also, companies strive to implement strict, continuous delivery processes to ensure code integrity and a stable, highly available production deployment of these real-time applications.

Meet HCL RTist

Introducing HCL RTist, an Eclipse-based modeling and development environment for creating complex, event-driven, real-time applications in C++.

HCL RTist provides software engineers with feature-rich tools for designing, analyzing, building, debugging and deploying real-time applications.

Supporting the Unified Modeling Language (UML) and its real-time profile (UML-RT), RTist allows developers to design their applications at a higher abstraction level than code.

With HCL RTist, you can:

- Design your real-time applications using state machines, capsules and other powerful UML-RT concepts
- Freely mix graphical diagrams with C++ code when developing applications
- Build high-performance libraries and executables from existing models
- Support collaborative development in both large and small scale agile teams
- Detect and fix problems using high-level model debugging

NodePlus

Another major highlight in HCL RTist 11 is **NodePlus**. With NodePlus you get all the necessary tools for developing Internet of Things (IoT) applications with HCL RTist. You can use it for extending your existing RTist applications with features often needed in IoT applications, such as communication with web servers, emitting MQTT events, accessing databases etc. Even if such things also can be done directly in the RTist application using C++, it is often significantly easier to do it in a language that is more commonly used for web-related tasks.

For example, NodePlus lets you develop using **Node-RED**, which is a popular “low code” tool where graphical flows of interconnected nodes can realize sophisticated functionality without almost writing a single line of code. Thousands of pre-made nodes are available for free on the internet, and you can simply drag-and-drop them into your application to use them.

Capabilities and Benefits

Designs at a Higher Abstraction Level than Code

- Provides UML Real-time models, statecharts, composite structure and other diagrams
- Utilizes a powerful Code Editor built on an Eclipse CDT
- Realizes thread safety using state machines and message-based communication
- Supports industrial-scale applications

Builds Executables Your Way

- Builds applications interactively and from batch builds
- Allows for easy setup of build configurations
- Provides a highly-customizable run-time environment

Debugs at a High-level (Verifies Design and Detects Failures)

- Features interactive model debugging
- Allows for trace management and visualization
- Provides run-time structure monitoring and behavior animation
- Offers combined model and code debugging

Allows for Teamwide Collaboration

- Supports Git and other SCM systems
- Features an interactive and intuitive compare/merge of both model and code
- Provides a powerful command-line interface
- Allows models to be accessed via web browsers and linked to requirements

Analyzes the Application

- Features navigation and search with diagram highlighting
- Supports refactoring of models and code
- Synchronizes code changes back to the model

Try HCL RTist today and develop stateful, event-driven and real-time applications.

Visit hcltechsw.com/RTist for more information.

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HCL RTist is the only tool needed to develop stateful, event-driven and real-time applications. HCL RTist belongs to the Secure DevOps product domain of HCL Software which is a division of HCL Technologies (HCL) that operates its primary software business. It develops, markets, sells and supports more than 20 product families in the areas of DevSecOps, Automation, Digital Solutions, Data Management, Marketing and Commerce, and Mainframes.

For more information, visit hcltechsw.com/RTist or email RTist@hcl.com.

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