What’s New in HCL RTist 11

updated for sprint 2019.43
Overview

- RTist 11 is based on Eclipse 2019.06 (4.12)

- HCL RTist is 100% compatible with IBM RSARTE. All features (with very few exceptions) are the same.

- Note: RTist 11 is currently an experimental release and should not yet be used for production. Feedback is welcome!

HCL RealTime Software Tooling
*** EXPERIMENTAL ***
Version: 11.0.0.v20191015_1437
Release: 2019.43

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Eclipse 4.12 (2019.06)

- Compared to RTist 10.3, RTist 11 includes new features from 4 quarterly Eclipse releases:

- For full information about all improvements and changes in these Eclipse releases see the links above
  - Some highlights are listed in the next few slides...
Eclipse 4.12 (2019.06)

- A new Minimap view gives a better overview of the text editor contents (useful when it’s large)
  - It’s easy to launch it by typing “minimap” in the QuickAccess field
The Select Workspace dialog now supports auto-completion
- Allows to pick a workspace more easily by only using the keyboard

User-defined filtering of the Project Explorer
- You can now create your own regular expressions for filtering out items from the Project Explorer
- Can be used as an alternative to working sets

will be hidden by the user filter
Copy/Paste of environment variables

- Setting up environment variables in a launch configuration is now much easier thanks to copy/paste support.
- Environment variables can be copied from one launch configuration to another, or from a text editor to a launch configuration (or vice versa).

Useful quick links for an empty workspace

- Quick links for creating or importing projects make it easier for new users to get started with an empty workspace.
- Which quick links that are shown depend on the current perspective.
Eclipse 4.12 (2019.06)

- Launch configurations are now accessible from Quick Access
  - Can start either a Run or a Debug session
Possible to rename a file without triggering a refactoring

- A checkbox controls if references to the renamed file should be updated

New preference to address a performance issue with line wrapping a large number of lines in the console

- C/C++ - Build – Console – Maximum number of lines to enable word wrap for

- Don’t set this too high if Wrap lines on the console is turned on
CDT 9.8 (included as part of Eclipse 2019.06)

- Improved dialog for attaching to a C++ application to debug
  - Command-line arguments for the process are now shown (allows to more easily find the process to debug)
  - The dialog now remembers a previously entered filter expression (to make it easier to attach to the same process multiple times)

- Copy the qualified name of a C++ declaration
  - A new command is available in the Source menu
  - Similar usecase as for the Copy button of the Qualified Name for a model element in the Properties view
CODAN improvements

- Additional checks implemented, for example to detect C-style casts and goto-statements

For more information about CDT improvements see
https://wiki.eclipse.org/CDT/User/NewIn96
https://wiki.eclipse.org/CDT/User/NewIn97
https://wiki.eclipse.org/CDT/User/NewIn98
NodePlus

- HCL NodePlus is a new install component of HCL RTist
  - **Note:** Currently NodePlus is not available in IBM RSARTE

- NodePlus provides all necessary tooling for developing IoT applications using Node-RED (and related technologies)
  - Node-RED projects - both for creating Node-RED nodes and flows of interconnected nodes
  - Node-RED server - for convenient deployment of Node-RED flows within the Eclipse workbench
  - Node.js projects - for creating Node.js applications
  - Node.js server - for convenient deployment of Node.js applications within the Eclipse workbench
  - Swagger - for specifying APIs using Swagger documents
  - Node.js Debugger - for debugging Node.js applications
  - Pug (formerly known as Jade) – for template-based rendering of webpages
  - Unit test
Node-RED Tools in NodePlus

- Node-RED editor
  - Configure nodes and wire them together into flows
  - Deploy changes to the Node-RED server
- View debug output and execution within the flow
- Install new nodes to the palette (e.g. from the public library)
Node-RED Tools in NodePlus

- **Node-RED Flow Projects**
  - Flows can be created directly in the Node-RED editor, but creating them as Eclipse projects has many benefits (e.g. team development using SCM integration)
  - An intuitive wizard for creating Node-RED Flow projects
  - Either create a flow from scratch or start from one of the existing flows in the public library

- **Node-RED Server**
  - A dedicated Servers view lets you create, start and stop Node-RED servers within the Eclipse workbench
  - Deploy a Node-RED flow onto a selected server and open its Node-RED editor
Node-RED Tools in NodePlus

- **Node-RED Node Projects**
  - More than 1900 nodes exist in the public library, but sometimes you may need to create your own specific node
  - An intuitive wizard for creating Node-RED Node projects
  - Benefit from all the usual Eclipse features when developing your node (e.g. SCM integration)
  - Either create a node from scratch or start from one of the existing nodes in the public library

- **Unit test of Node-RED nodes**
  - Unit tests are created using the Mocha framework and results are shown in a special Node-RED Unit Test view
Node-RED Tools in NodePlus

Flow project

Node in use in a flow

Node project
Node-RED Tools in NodePlus

- Nodes for communicating with an RTist application
  - rtist request
    Let a flow send or invoke an event into an RTist application
  - rtist receive
    Trigger a flow when receiving an event that is sent or invoked from an RTist application
  - rtist response
    Reply to a received event that is sent or invoked from an RTist application

- These nodes make use of the JSON API provided by lib-tcp-server (i.e. the RTist application must use this library)
  - The nodes can be statically configured in the Node-RED editor
  - It’s also possible to provide many of the node properties in the message payload for a more dynamic behavior
Swagger Support in NodePlus

- Document APIs using Swagger in a new Swagger editor

Support for JSON and YAML syntax

Syntax highlight and content assist

Visual API representation

Support for executing / testing API

Automated generation of example data

Content types selections
Node.js Tools in NodePlus

- Wizard for creating Node.js projects
- Create, start and stop a Node.js server from within the Eclipse workbench
- Debug Node.js applications with a modern JavaScript debugger
- New editor for developing HTML pages for your Node.js application using the Pug template engine
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