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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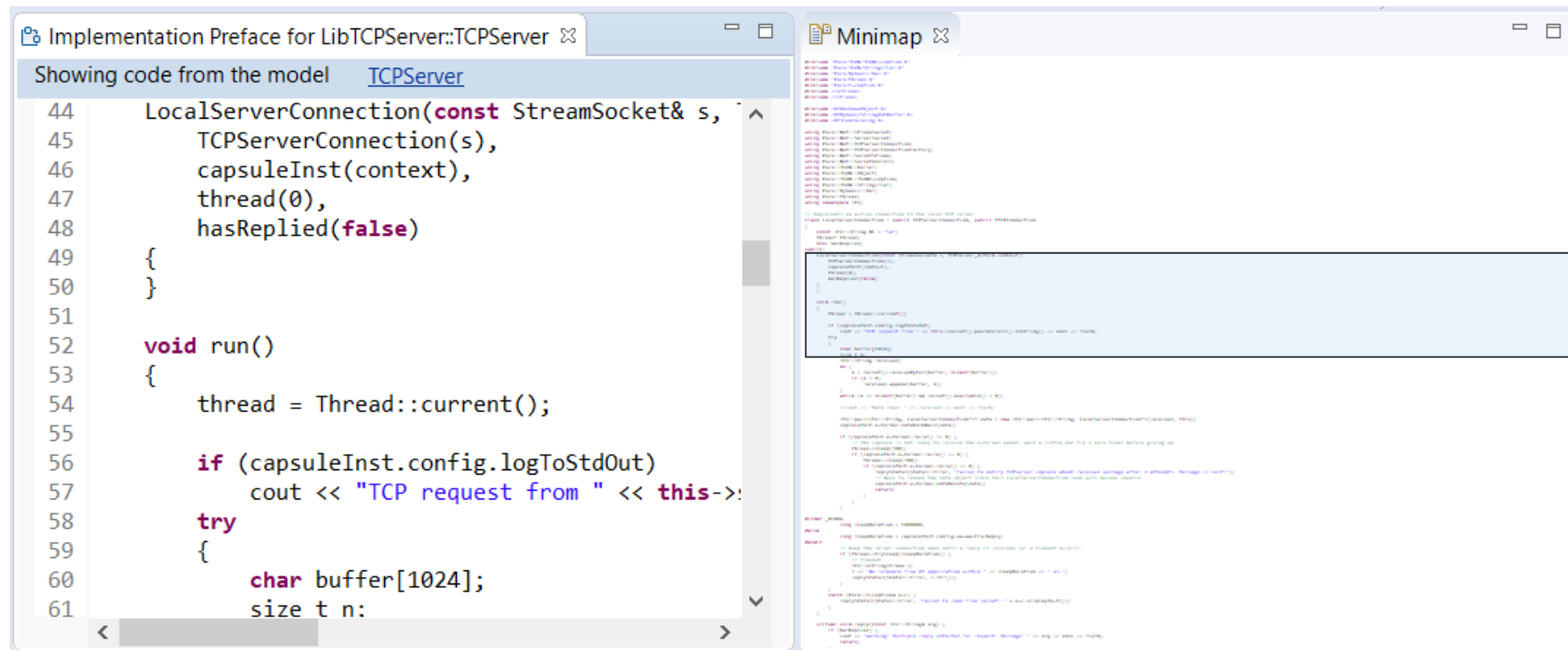Visit https://www.hcltech.com/products-and-platforms/support

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Eclipse 4.12 (2019.06)

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

- 2018.09 (https://www.eclipse.org/eclipse/news/4.9/platform.php)

- 2018.12 (https://www.eclipse.org/eclipse/news/4.10/platform.php)

- 2019.03 (https://www.eclipse.org/eclipse/news/4.11/platform.php)

- 2019.06 (https://www.eclipse.org/eclipse/news/4.12/platform.php)

▸ 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...

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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

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Eclipse 4.12 (2019.06)

▸ **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
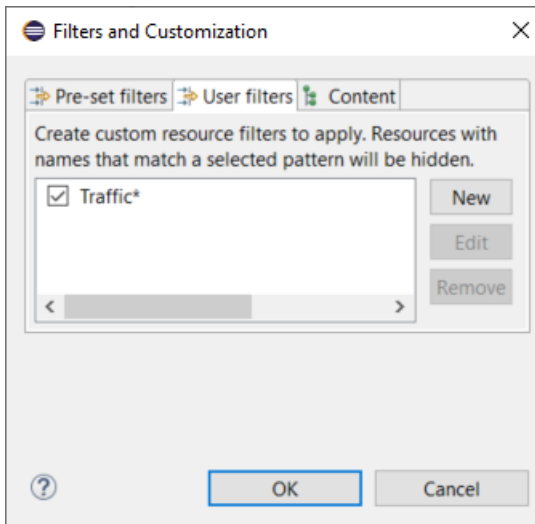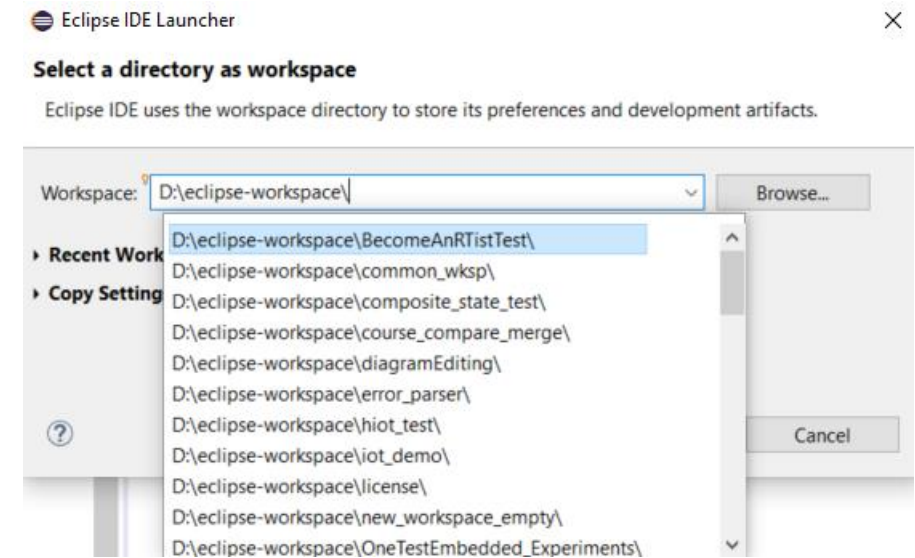
will be hidden
by the user filter

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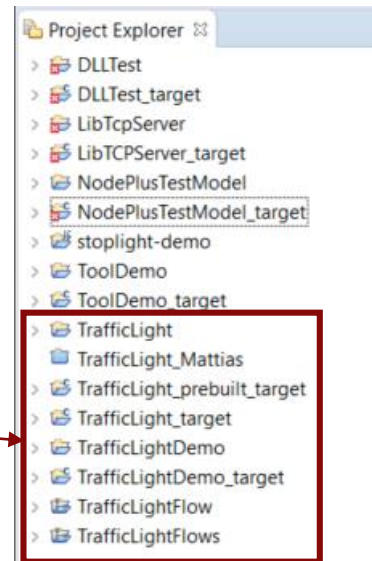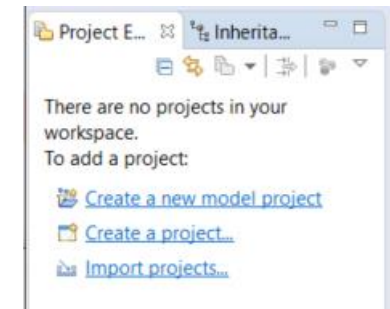
Eclipse 4.12 (2019.06)

▶ 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)
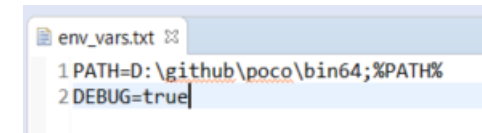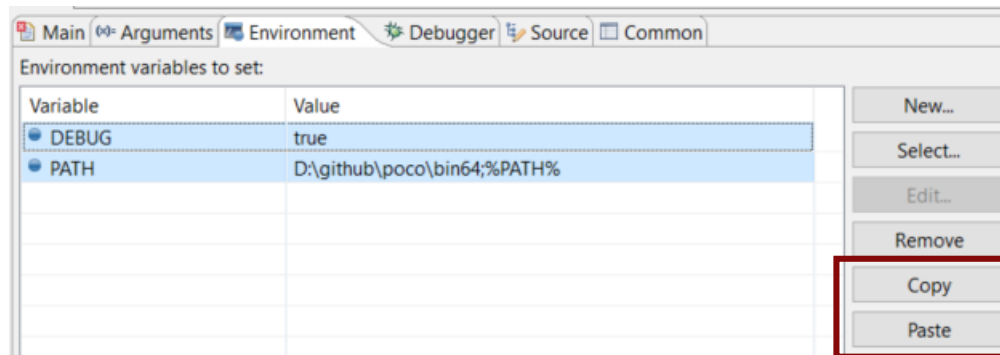

▶ Useful quick links for an empty workspace

- 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

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Eclipse 4.12 (2019.06)

▸ Launch configurations are now accessible from Quick Access

 ▪ Can start either a Run or a Debug session

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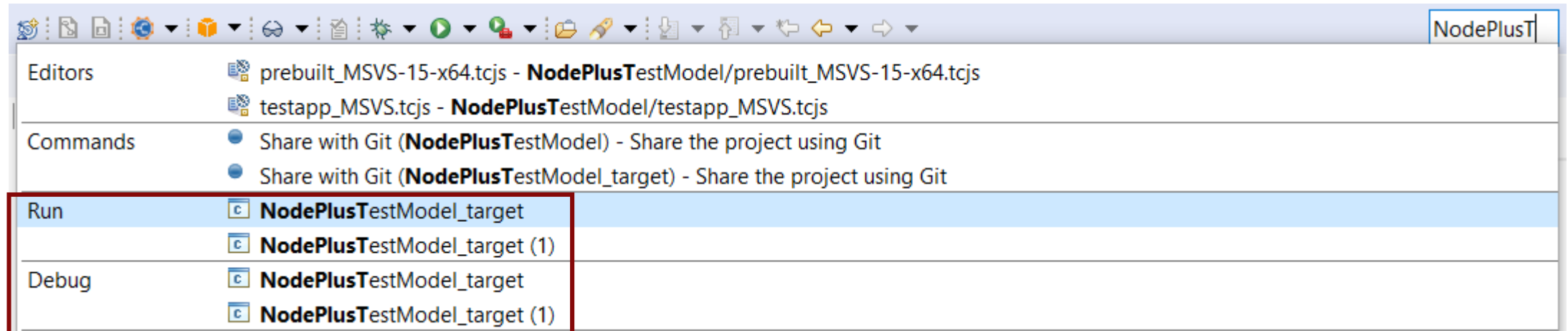
CDT 9.8 (included as part of Eclipse 2019.06)

▸ Possible to rename a file without triggering a refactoring

- A checkbox controls if references to the renamed file should be updated
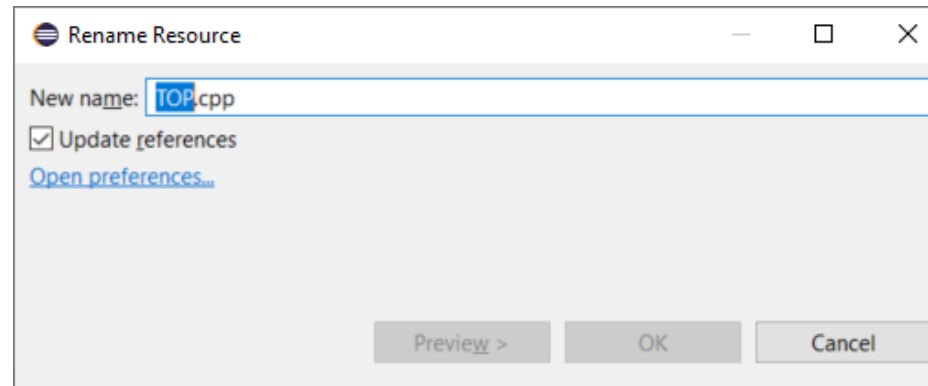
▸ New preference to address a performance issue with line wrapping a large number of lines in the console

- *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

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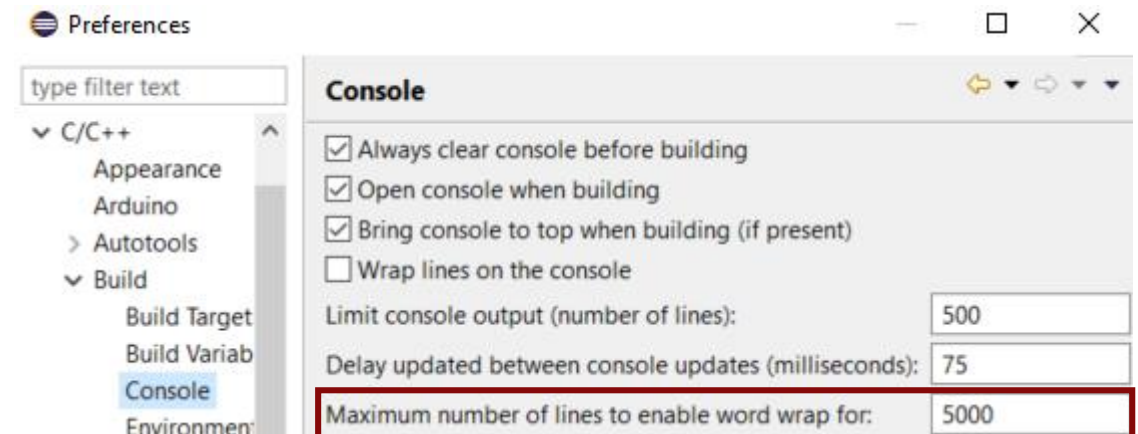
CDT 9.8 (included as part of Eclipse 2019.06)

▸ 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

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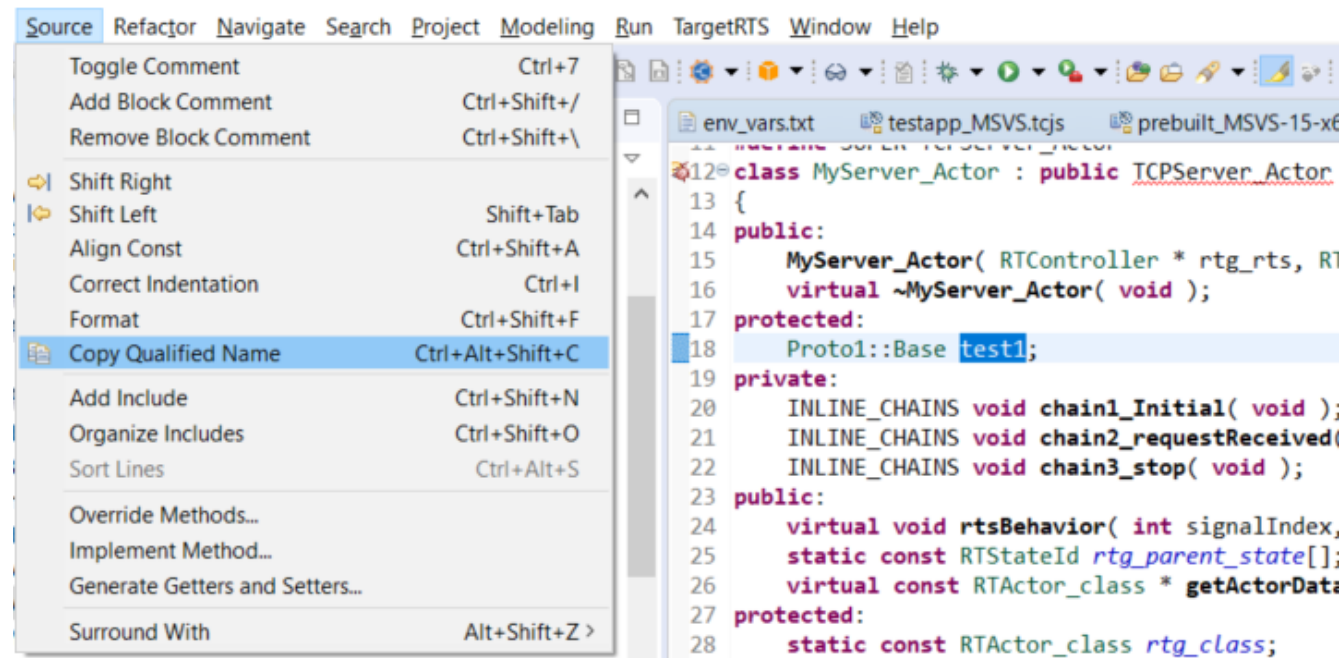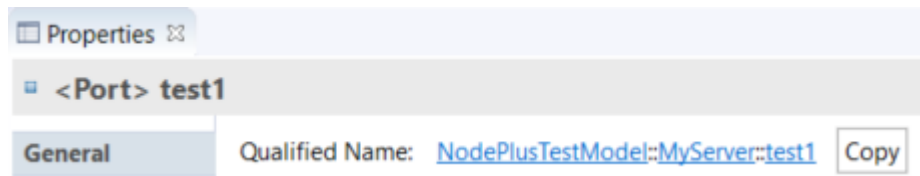
CDT 9.8 (included as part of Eclipse 2019.06)

▶ 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

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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

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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)

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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

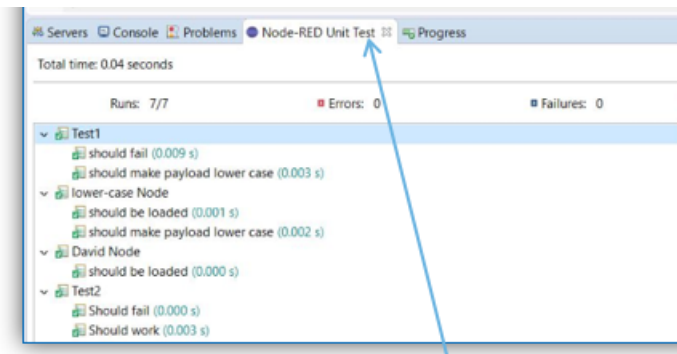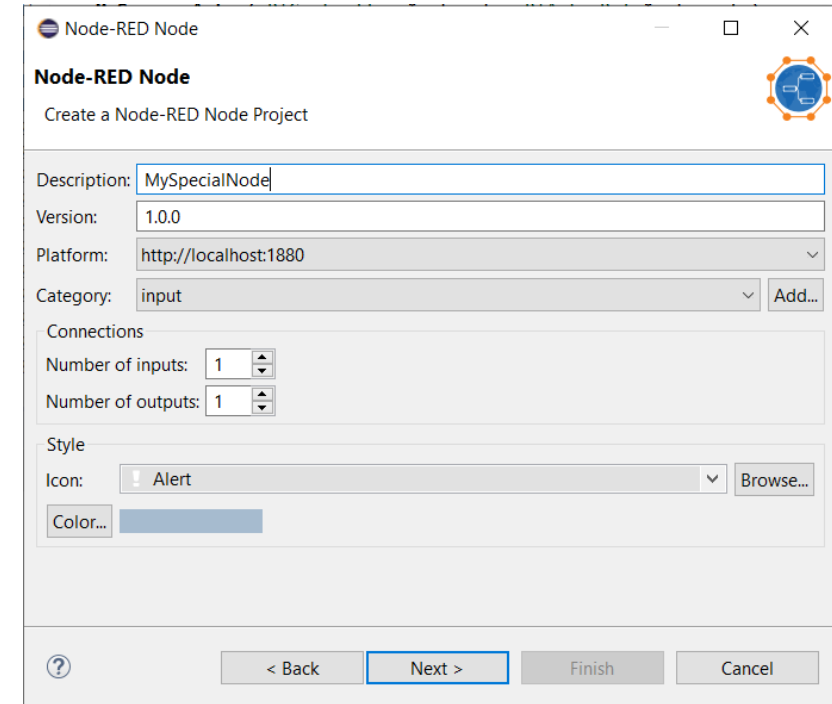- Deploy a Node-RED flow onto a selected server and open its Node-RED editor

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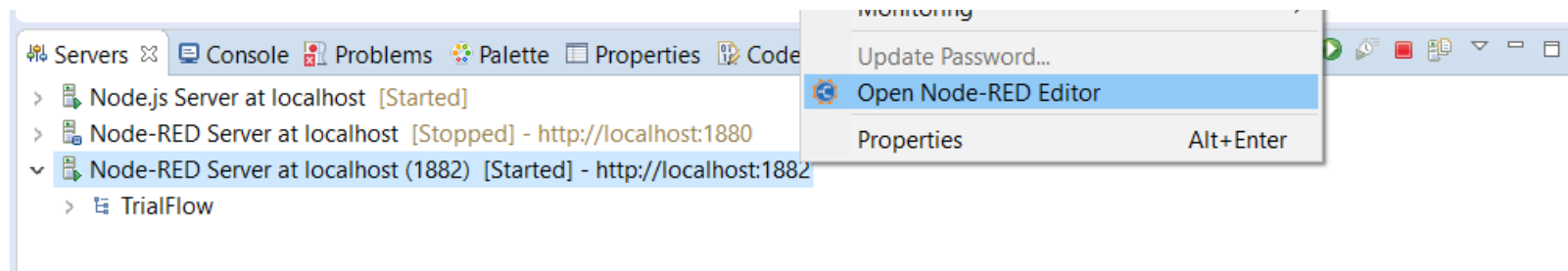
Node-RED Tools in NodePlus

‣ **Node-RED Node Projects**

  ▪ More than 1900 nodes exist in the public library, but sometimes you may need to create you 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


Custom "Unit Test" view

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Node-RED Tools in NodePlus

Flow project

Node in use in a flow

Node project

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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

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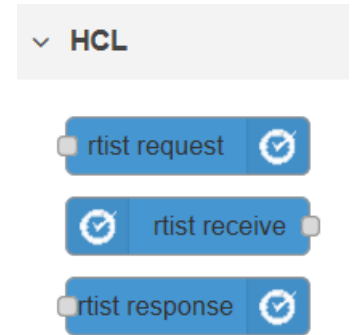
Swagger Support in NodePlus

▶ 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

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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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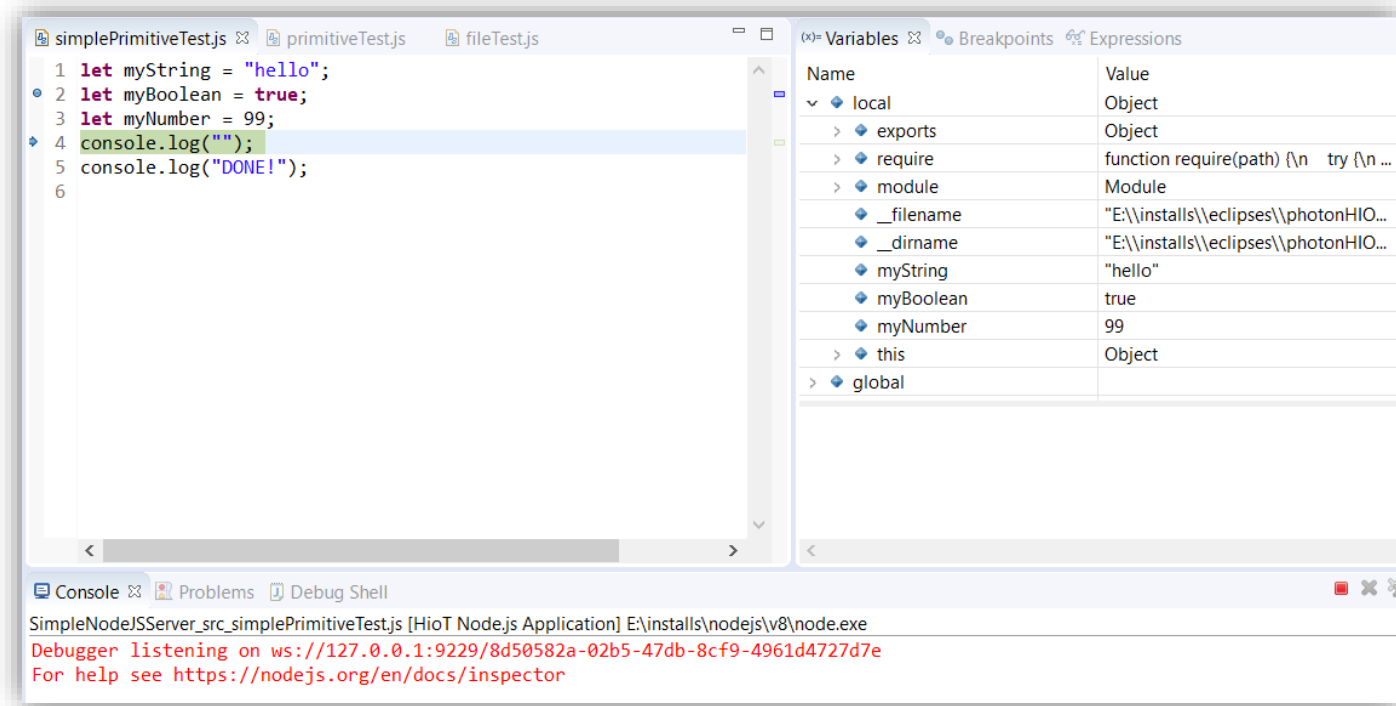
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