Wind River WindISS

1 Abstract

This document describes the setup and handling of **Wind River WindISS** Compiler/Debugger as target system.

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2 Introduction

TESSY supports the **Wind River** compiler (dcc) in connection with the **Wind River WindISS** Debugger for automatic test execution. Interactive debugging is also supported since version 4 of the **Wind River Workbench**.

3 Setup

Running tests with Wind River WindISS from TESSY requires the installation of Wind River WindISS 5.9.2.0 or later.

3.1 TESSY Environment Editor (TEE) Settings

The TESSY environment editor provides some settings that need to be adapted for the controller you are using. You need to add the **Wind River WindISS** environment to your project configuration as described below.

3.1.1 Step 1: Enabling the Wind River WindISS Target Environment

Open the TEE from within your TESSY using the menu File➜Edit Environment…

Select the filter settings **Show All** and enable the **Wind River MPC** or **Wind River RH850** environment within the **Configuration** section of the TEE using the **Enable Environment** entry from the context menu.

3.1.2 Step 2: Add Wind River Compiler to the Project Configuration

Now switch the filter back to **Hide Disabled**, so that you just see the enabled target environments. This allows easy drag-and-drop of the **Wind River** compiler node onto the **File** node of your project configuration.

3.1.3 Step 3: Adjust Target Settings

Now open the **Wind River** compiler node and review the settings within the **Wind River WindISS** target node. You need to change the **Target Install Path** entry according to the **Wind River WindISS** install path. Choose the path to the directory ending with **Windriver, e.g. C:\Windriver**.

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Compiler Install Path	$(Target Install Path)\diab\$(Compiler Version)
Compiler Version	5.9.2.0
CPU	PPCE200Z0HV
Endianess	big
Execution Environment	PPCE200Z0HVES:windiss
Init Code	
Init Definitions	
Linker File	
Linker Options	
Startup File	$(TESSY_SYSPATH)\targets\diab\crt0_mpc.s
Target Install Path	C:\WindRiver

3.1.4 Step 4: Adjust Target Settings

This target requires setting the correct compiler version in the **Compiler Version** attribute of the TEE! Otherwise the target binary cannot be built.

3.1.5 Step 5: Adjust Options

Feel free to select the environment node (named "(Default)" by standard) and change the **Linker File** attribute if you need one.

4 Executing Tests Automatically

You can now execute tests by selecting the "Execute Test" button within TESSY. Choose the instrumentation options and run a test.

5 Interactive Debugging

Interactive debugging is supported since version 4 of the Wind River Workbench. Earlier versions of the Workbench are not supported for this target adaption.

TESSY uses different calls for normal test runs and interactive debugging test runs. The first uses the windiss.exe executable, which is provided with the Wind River compiler installation, the latter uses windiss_server.exe which is provided by the Wind River workbench installation. Thus there are two different TEE attributes which represent each of them. **Slave Call** represents the command call for the normal test run while **Slave Debug Call** represents the command call for the interactive debugging test run. The following sections explain how to debug your test object interactively.

5.1 Setup the Wind River Workbench

***Please note**: You do need version 4 or higher of the Wind River Workbench!*

The WindISS server executable which is started by TESSY opens a TCP/IP port. The default value TESSY's TEE configuration is configured to use is 63880. In order to connect the Wind River workbench to the Wind River WindISS server you will need to setup or import a convenient connection. You can find a proper one in TESSY's installation directory under 'sys\target\windriver\Attach_WindISS_at_63880.peer'. Select 'File➜Import…' from Wind River Workbench's menu. Select 'System Management➜Connections' and click 'Next' as shown below.

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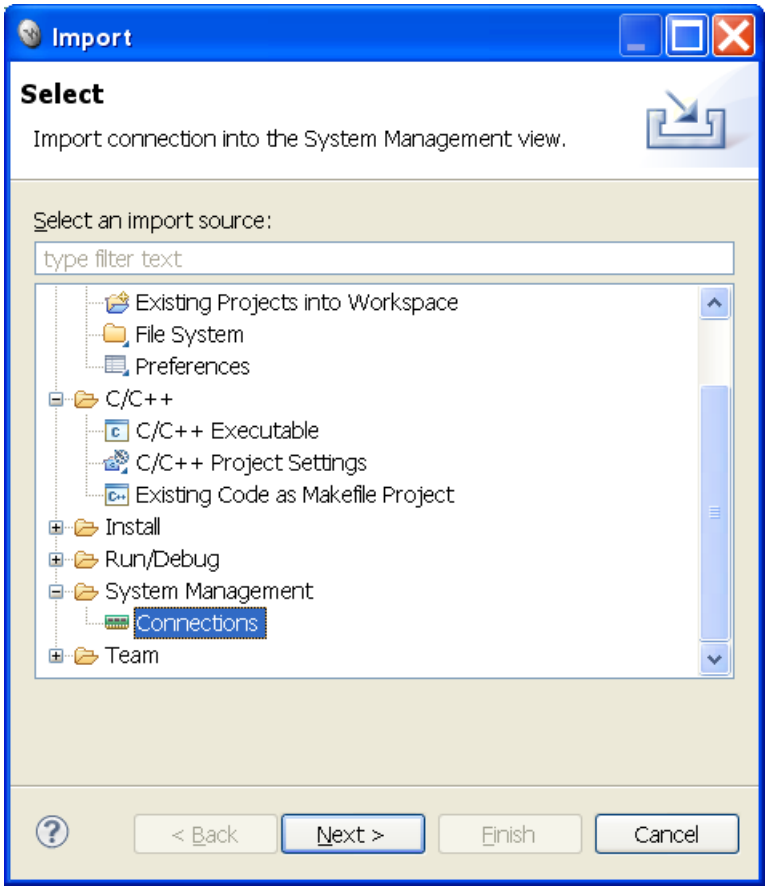
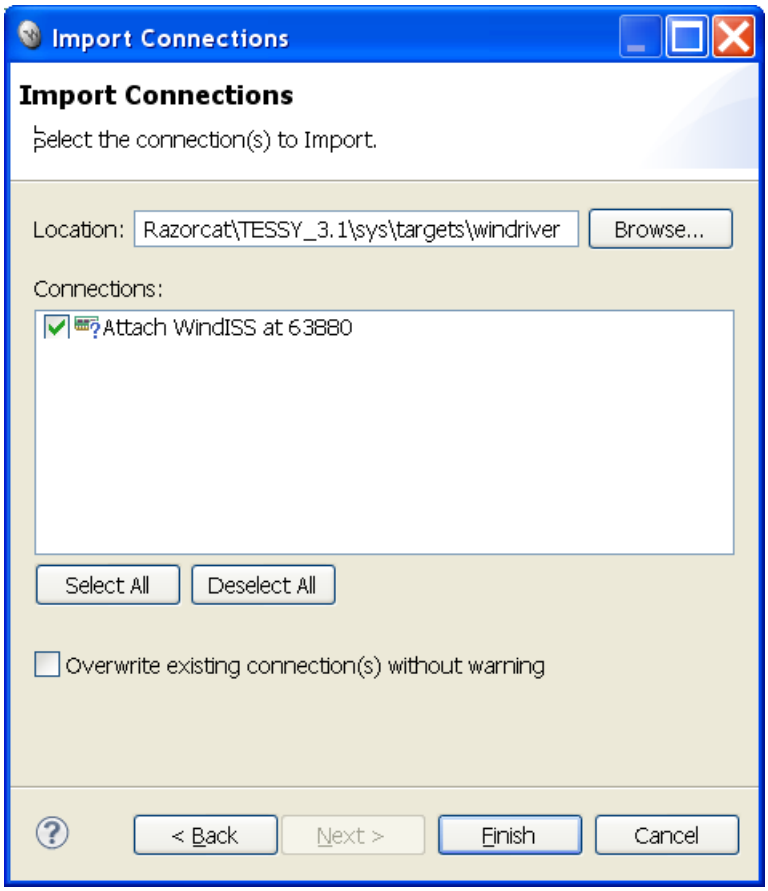


Select ‘Attach WindISS at 63880’ and click ‘Finish’.



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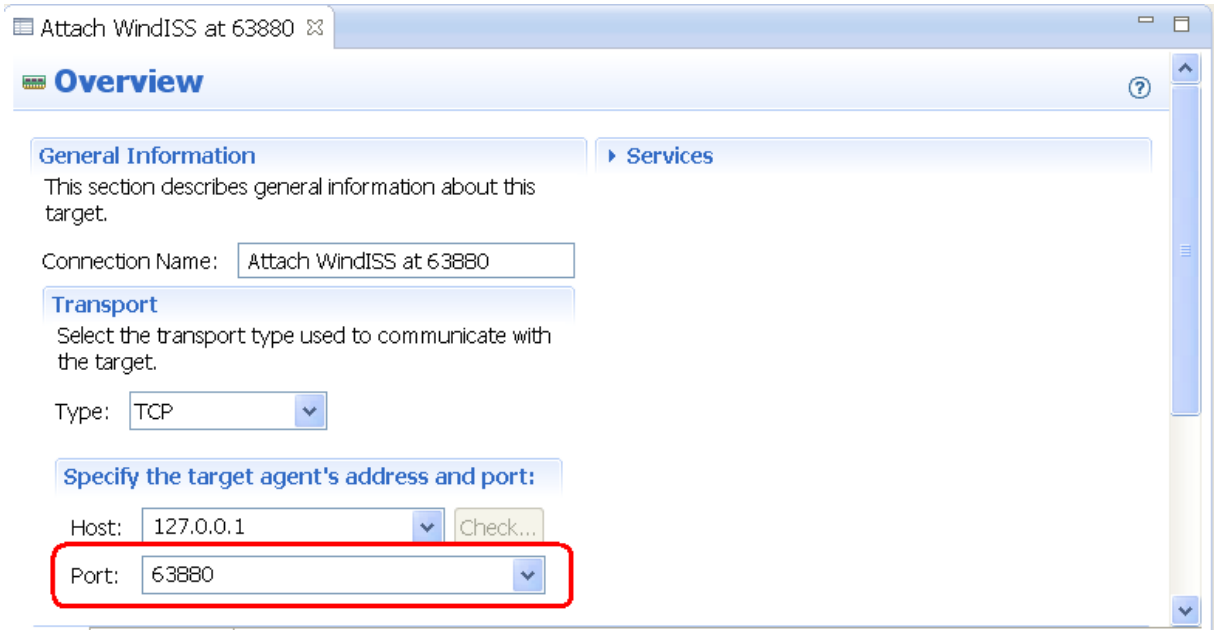
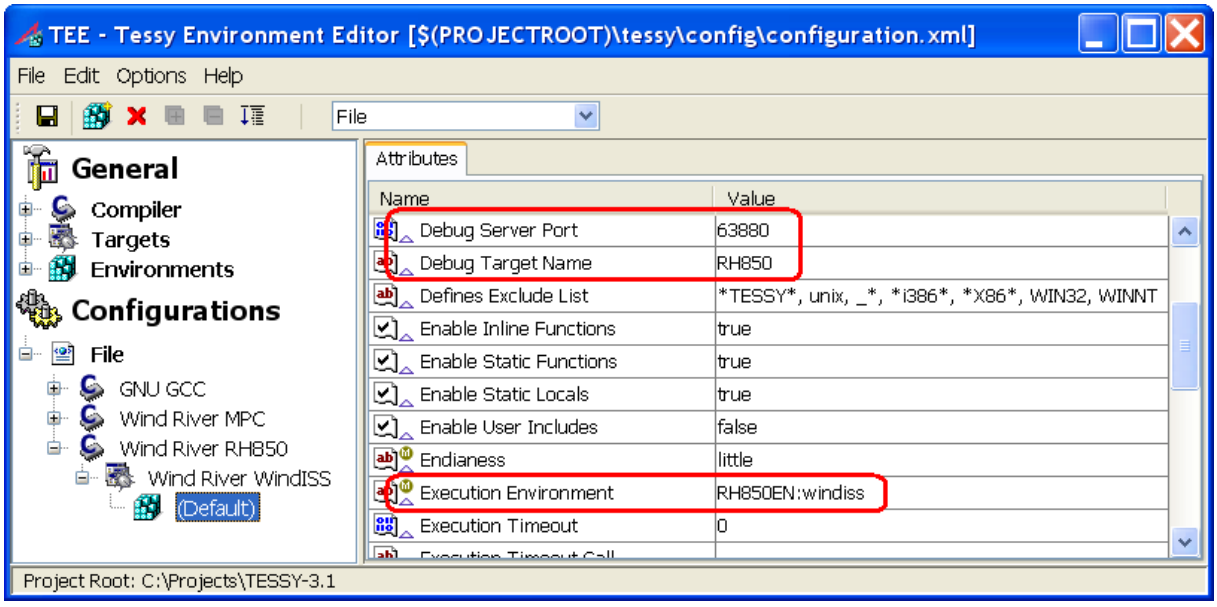
You may change the connection name as well as the port number. Only make sure



the port number resembles the TEE attribute **Debug Server Port**.



The attribute **Debug Target Name** can either be RH850 to debug a binary built for the RH850 processor or PPC603 to debug the MPC processor.

***Please note**: At the time of writing of this document Wind River only supports the RH850 processor family for interactive debugging with the Workbench 4!*

Also make sure you set the **Execution Environment** attribute properly.

5.2 Launch the WindISS server

Before you let TESSY start the WindISS server you may copy the name of your test object from within TESSY as shown below.

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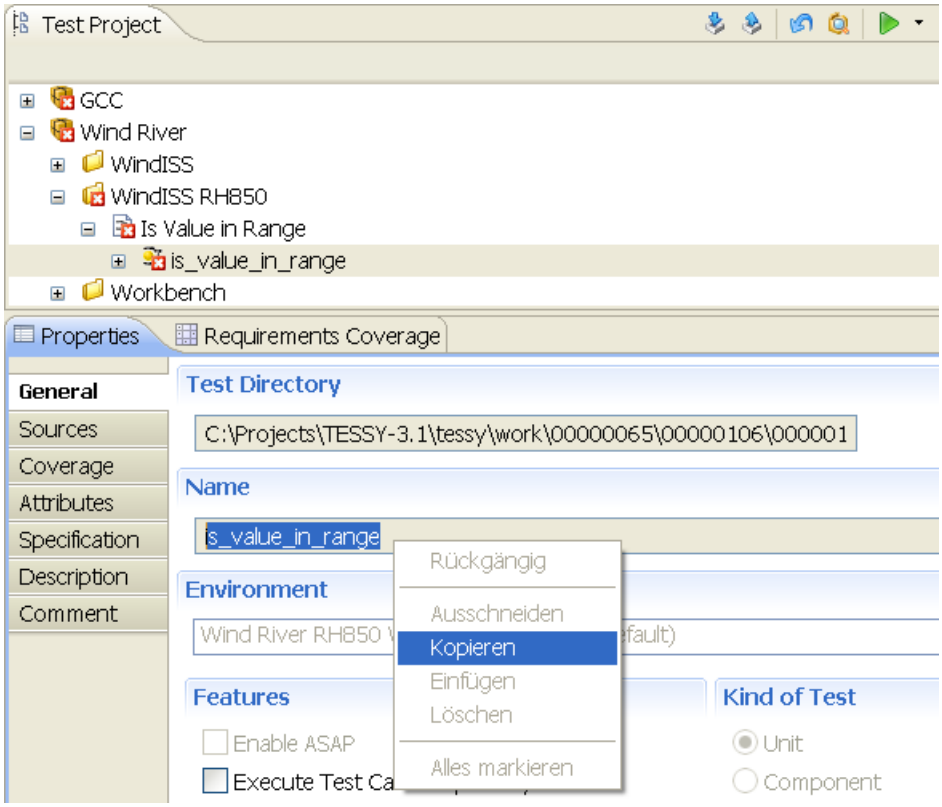
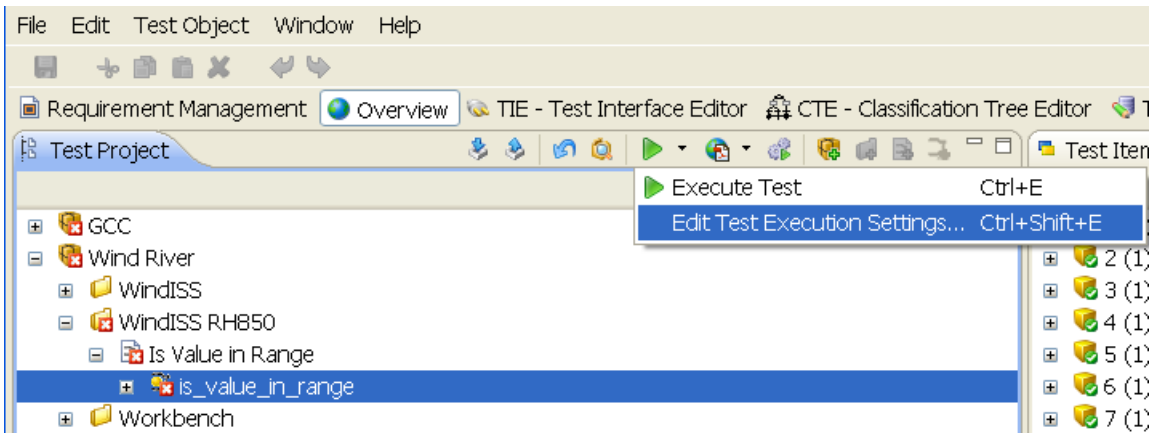


Now open the **Execute Test** dialog of TESSY



and select ‘Define Breapoint at Test Object’.

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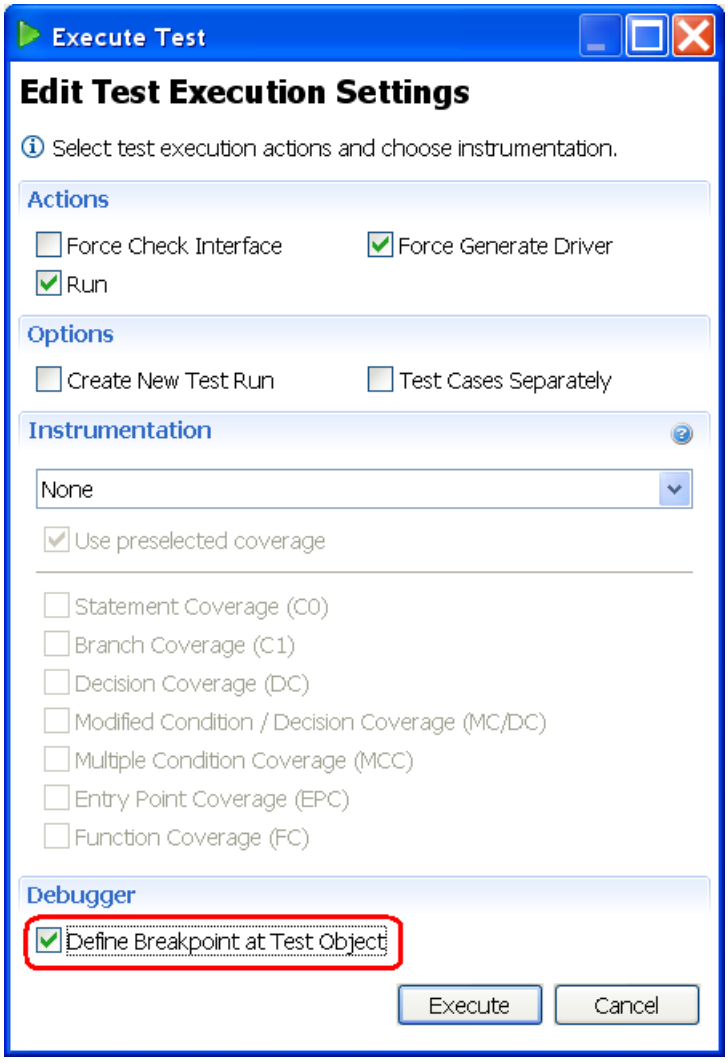
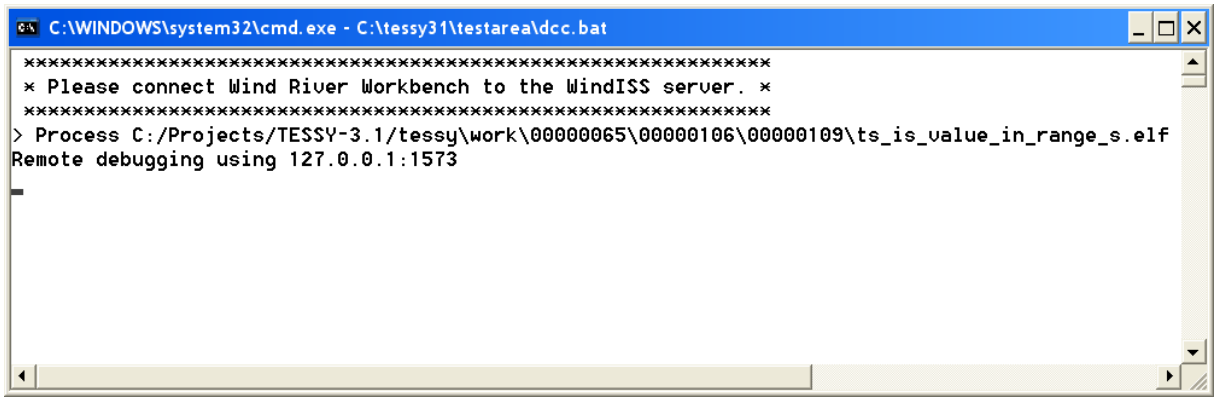


Click 'Execute' to launch the WindISS server.

We provide two different dccdebug.sh scripts. The default one used does not run in a Windows console. The second one dccdebugi.sh starts the WindISS server in its own Windows console. The latter can be useful if you want to utilize the WindISS server's command language, which should not be needed for TESSY test runs.



The 127.0.0.1:1573 shown in the above example does **not** mean that the WindISS server is listening on port 1573.

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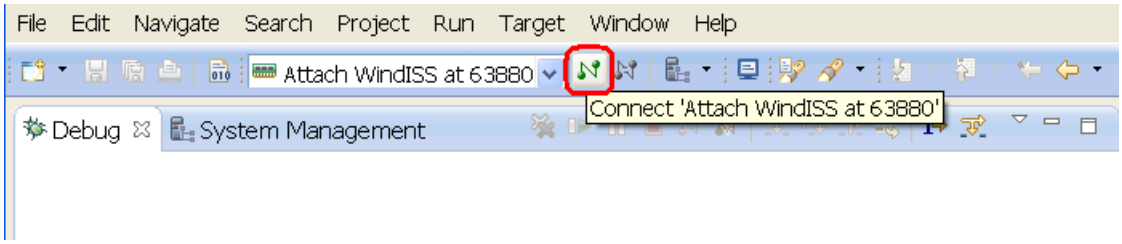
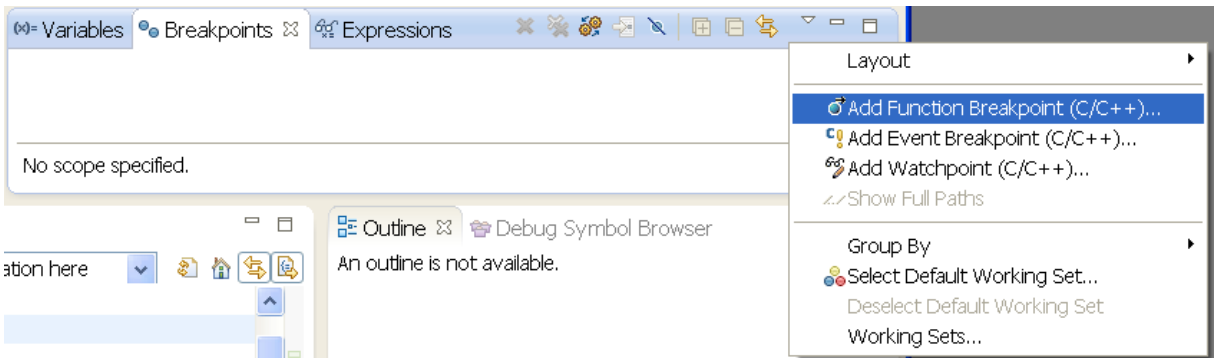
5.3 Connect the Wind River Workbench

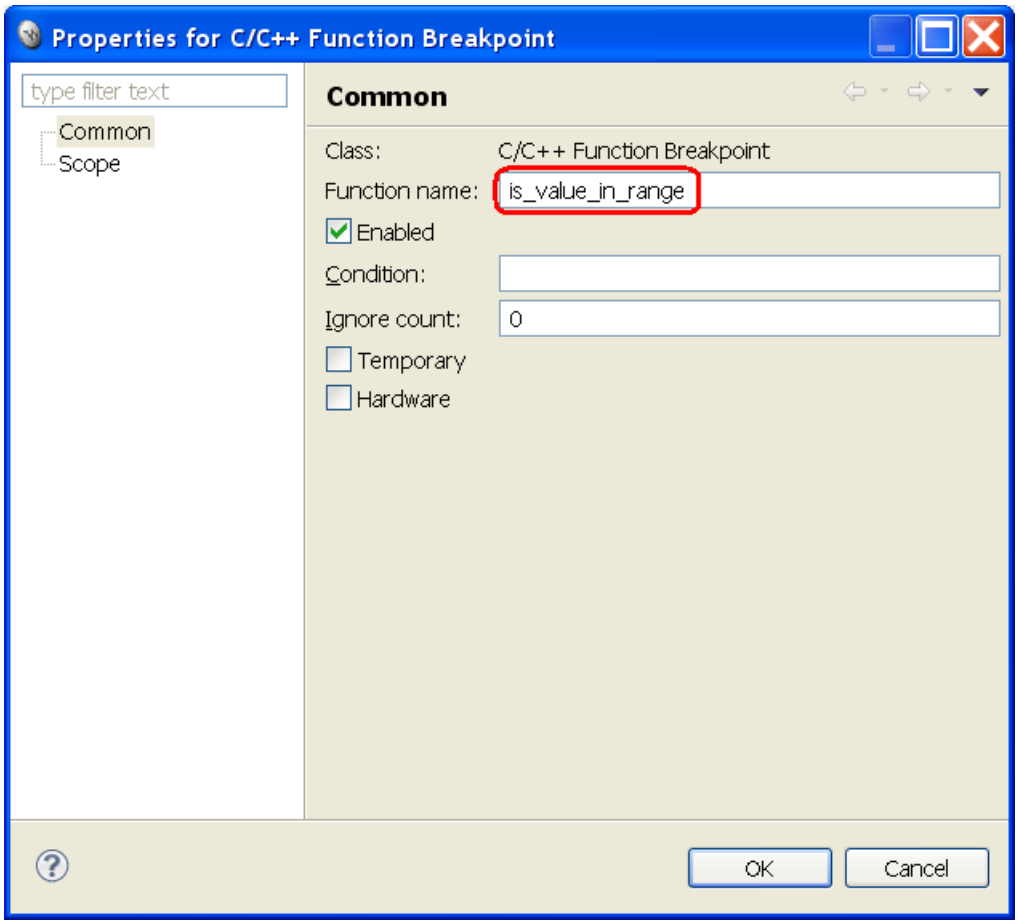
Once the WindISS server is started, you can connect the Wind River Workbench to it. Make sure the box shows 'Attach WindISS at 63880' and click the **Connect** button.



5.4 Set the Test Object Breakpoint

Do not forget to set your test object breakpoint which you have copied before.





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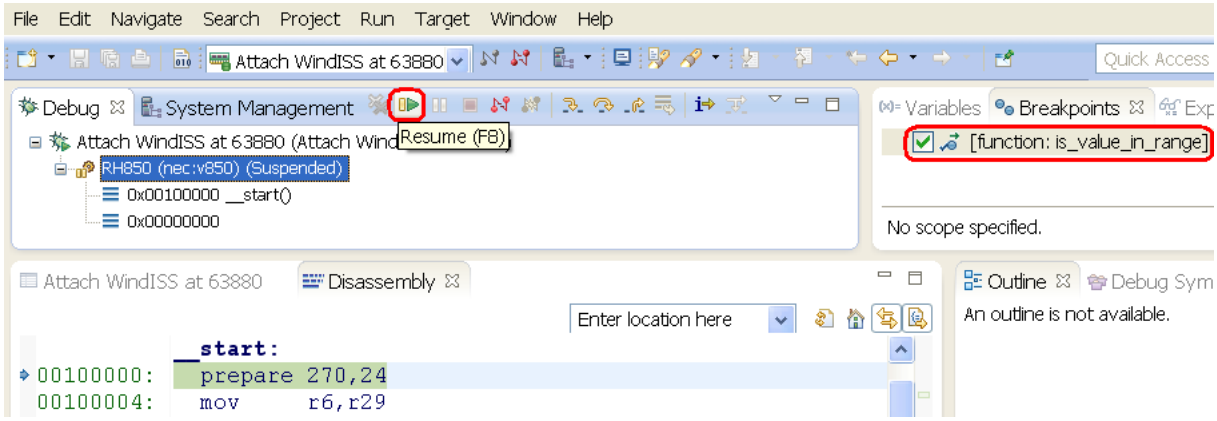
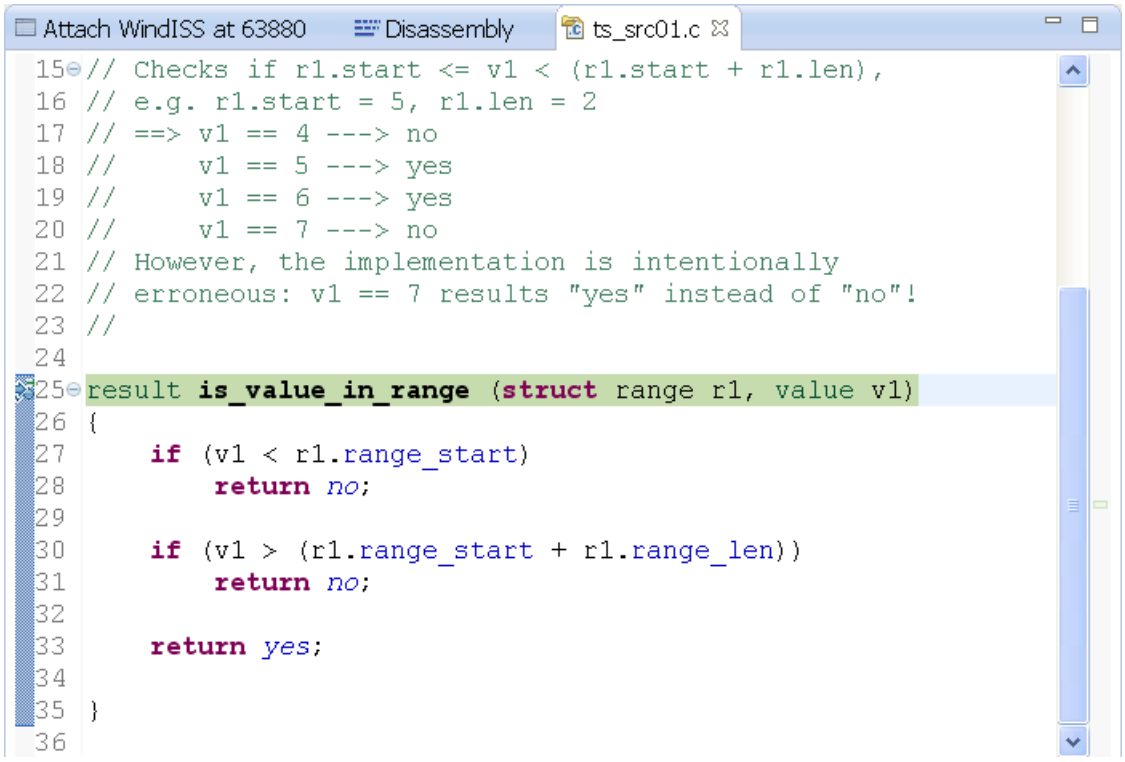
5.5 Resume

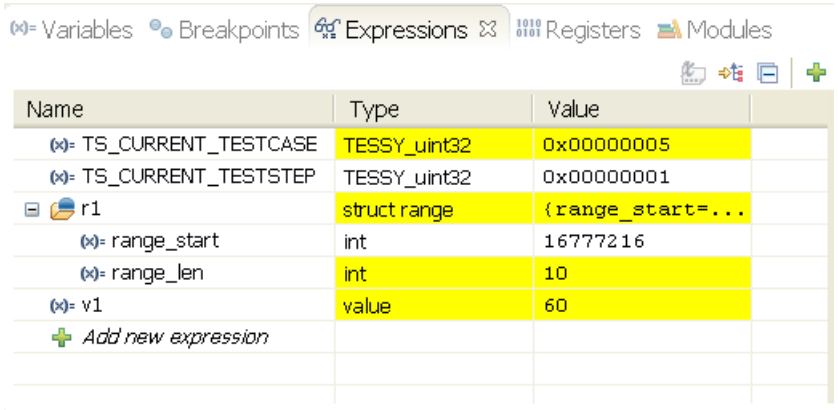
After you clicked the ‘Resume’ button



the debugger will stop at your test object with all of your test data being initialized.



In order to keep track of the test case and test step number you may utilize the **Expressions** view of the Wind River Workbench as shown below.



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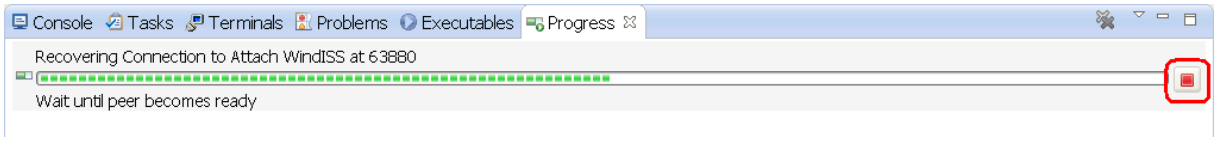
5.6 Stop the debug session

Disable the breakpoint and click on the resume button. The WindISS server will quit at the end of the test run automatically, whereas the connection has to be stopped manually. If the **Progress** view is not visible, click on the lower right button of the Wind River Workbench to open it.

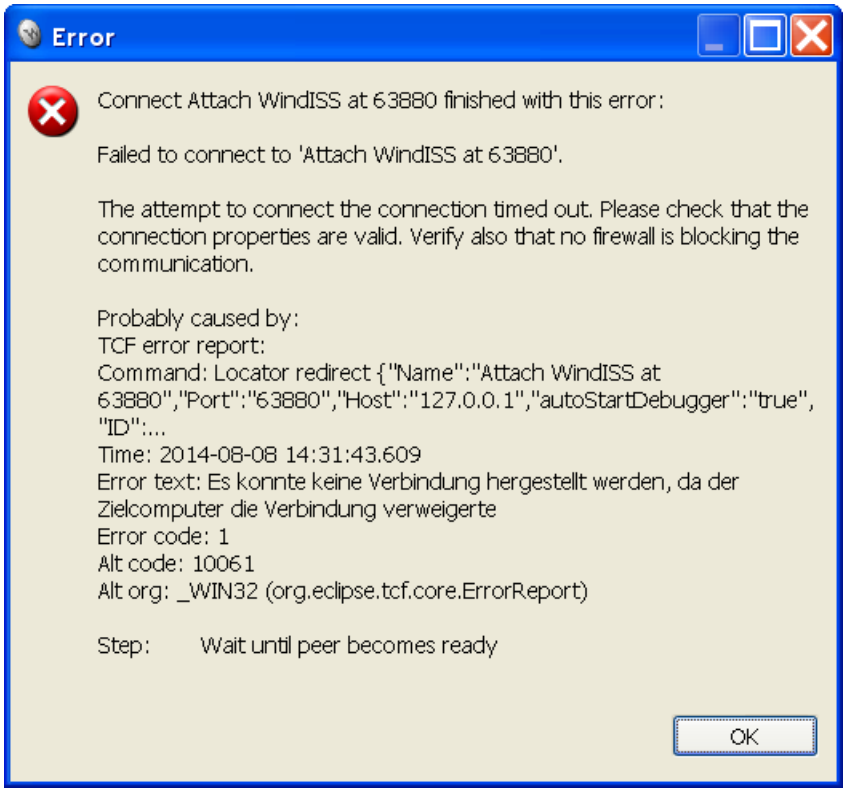
In the **Progress** view click on the red button on the right hand side.



6 Trouble-Shooting

6.1 The Wind River Workbench cannot connect

If you encounter a message box like the following you may try to exchange the generic.launch file of your Wind River Workbench installation, which is found in folder ‘workbench-4\resources\launcher’, with the one found in folder ‘sys\targets\windriver’ of TESSY’s installation directory.



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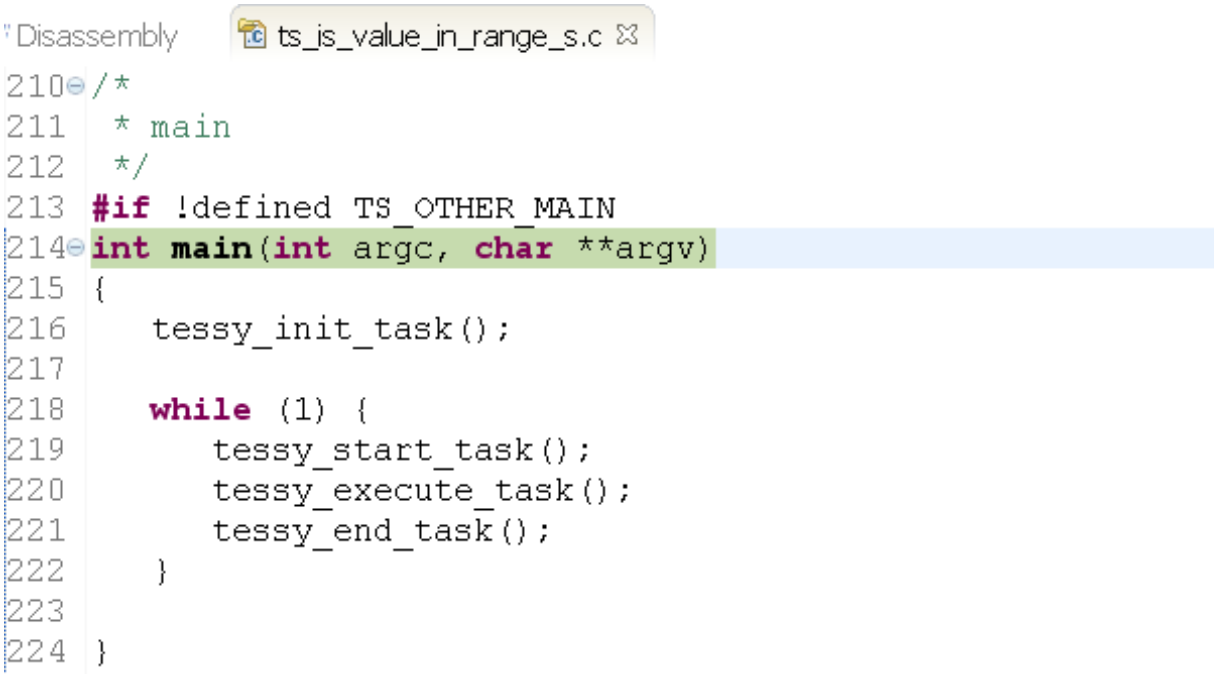
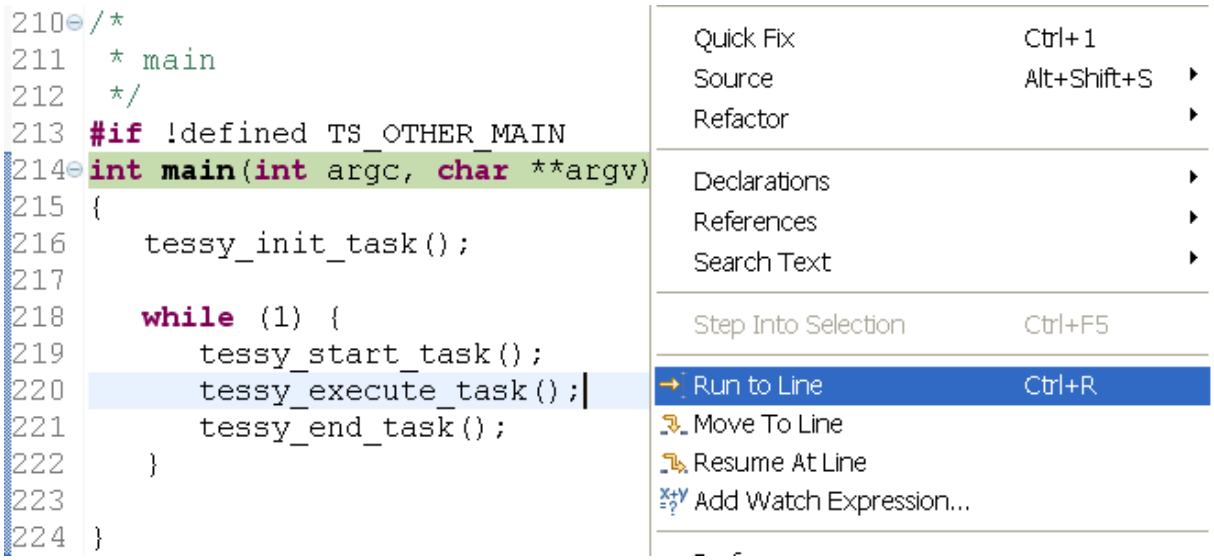
6.2 Test object breakpoint cannot be set

If the test object's breakpoint cannot be set, you may step through the code manually as shown below. At first try to reach function main. For instance you can set a breakpoint at function main and press the continue button.



Move the cursor to the line where the call to function **tessy_execute_task()** is located. Open the context menu and select **Run to Line** or step to the function by typing **F6** consecutively.



Next step into function **tessy_execute_task()**.

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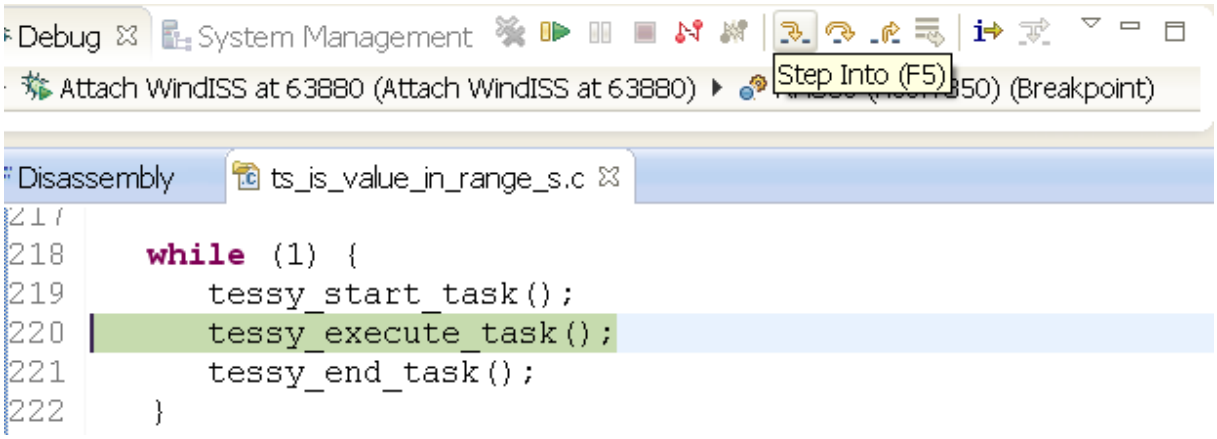
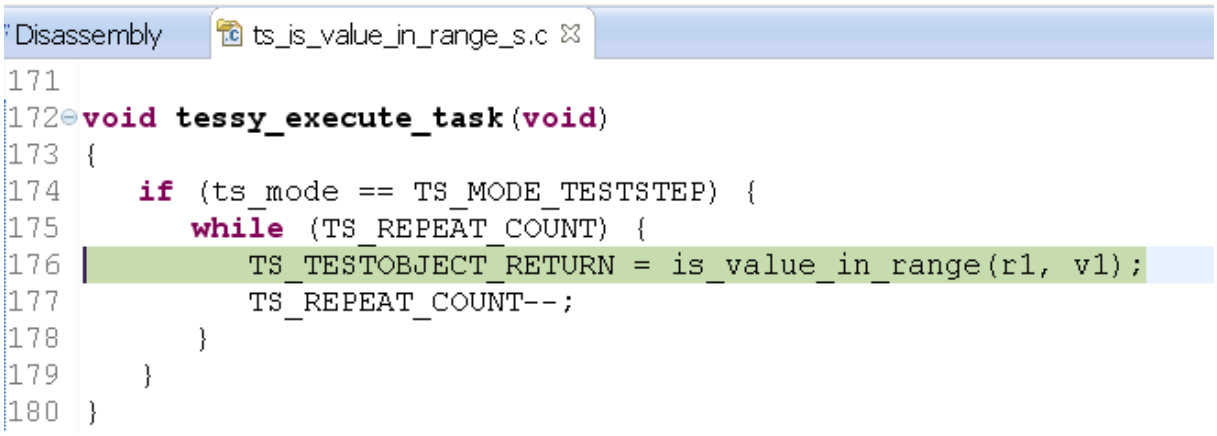
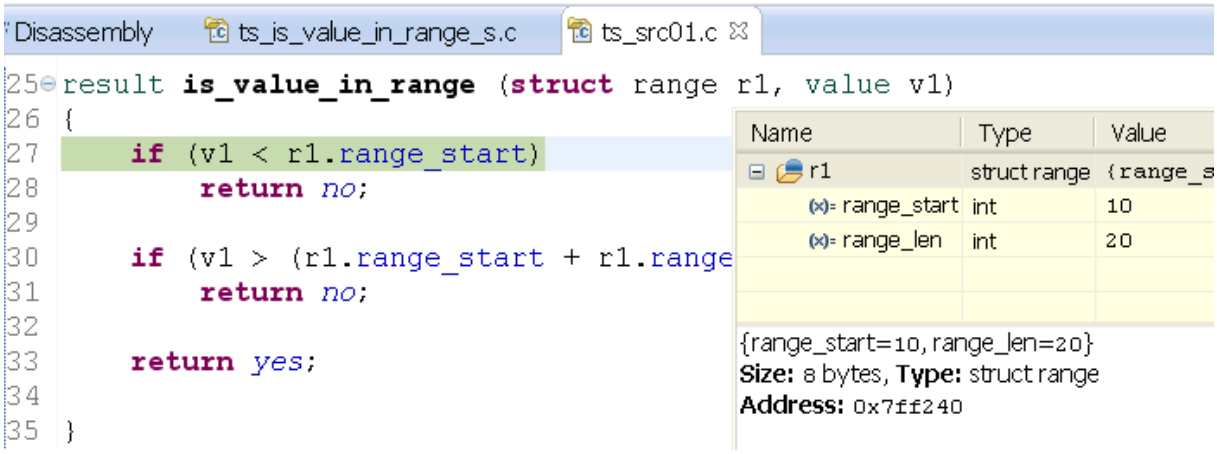


Step until your test object function and step into the function.





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