

Wind River VxWorks Debugger

Abstract

This document describes the usage of the Wind River VxWorks debugger as target system. The minimum required version of Wind River VxWorks is 7. TESSY supports the Pentium and the ARM controller family.

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1 Wind River VxWorks Debugger

The communication between TESSY and Wind River VxWorks is based on the Wind River Debug shell (WRDBG), which uses a GDB like command language. TESSY's VxWorks specific master launches and controls the WRDBG to communicate with the Wind River VxWorks debugger.

Before WRDBG tries to establish the connection to the debugger Wind River VxWorks has to be started manually from command line or from within the Wind River Workbench. The latter option is described in this document.

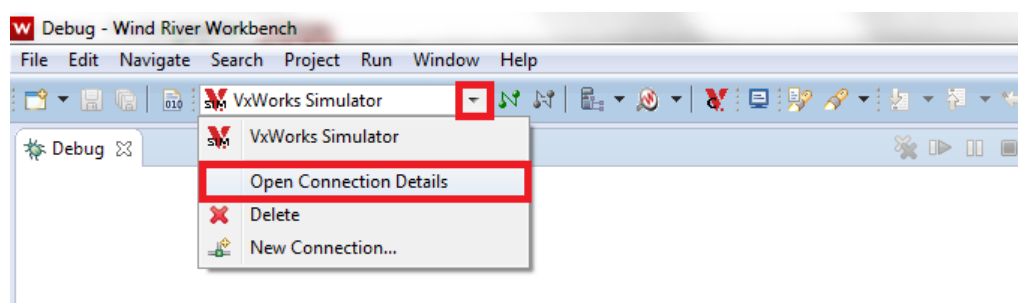
As a prerequisite you will have to setup the required Wind River VxWorks environment on your own. You can use the same Wind River VxWorks environment that you use for your own company projects. Please consult the corresponding Wind River manuals.

The following chapters will guide you through the TESSY Environment Editor (TEE) setup and point you to a special network option you will have to adjust in your Wind River VxWorks environment.

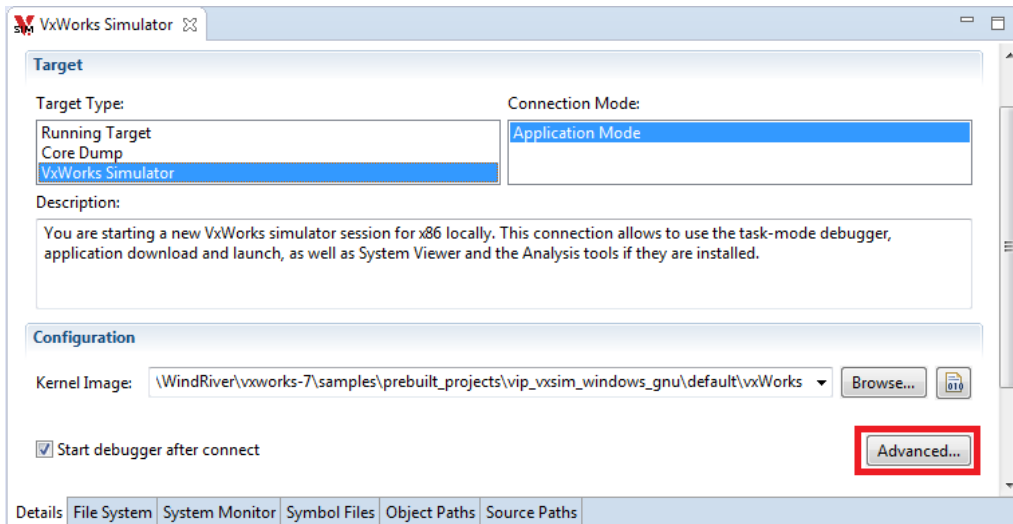
1.1 Adjustment of the Wind River VxWorks environment

By default, Wind River VxWorks provides a dynamic debug network service port which may be contacted from the WRDBG. Since TESSY provides automatic test run and test evaluation you have to alter this feature and let Wind River VxWorks bind a fixed network service port.

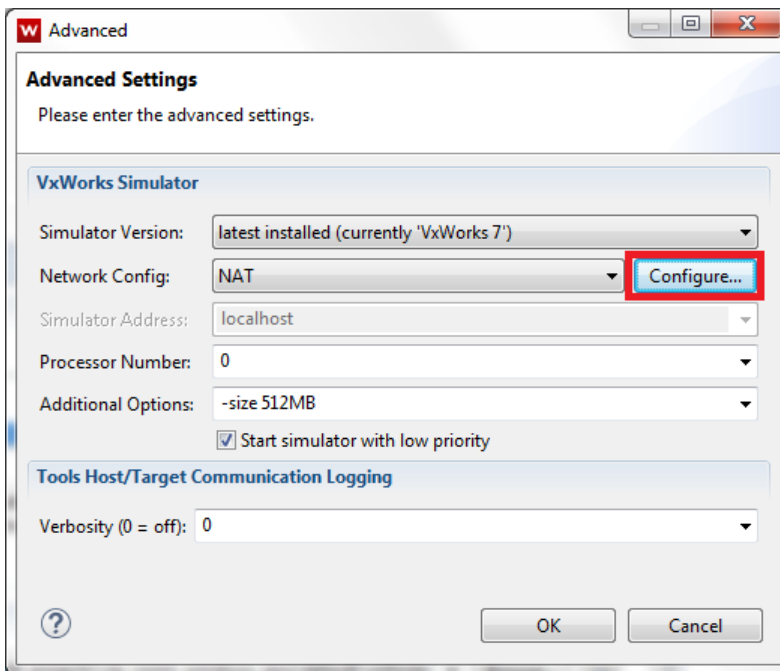
Please start the Wind River Workbench and open the Wind River VxWorks connection details as shown below. The connection name might differ from your own configuration.



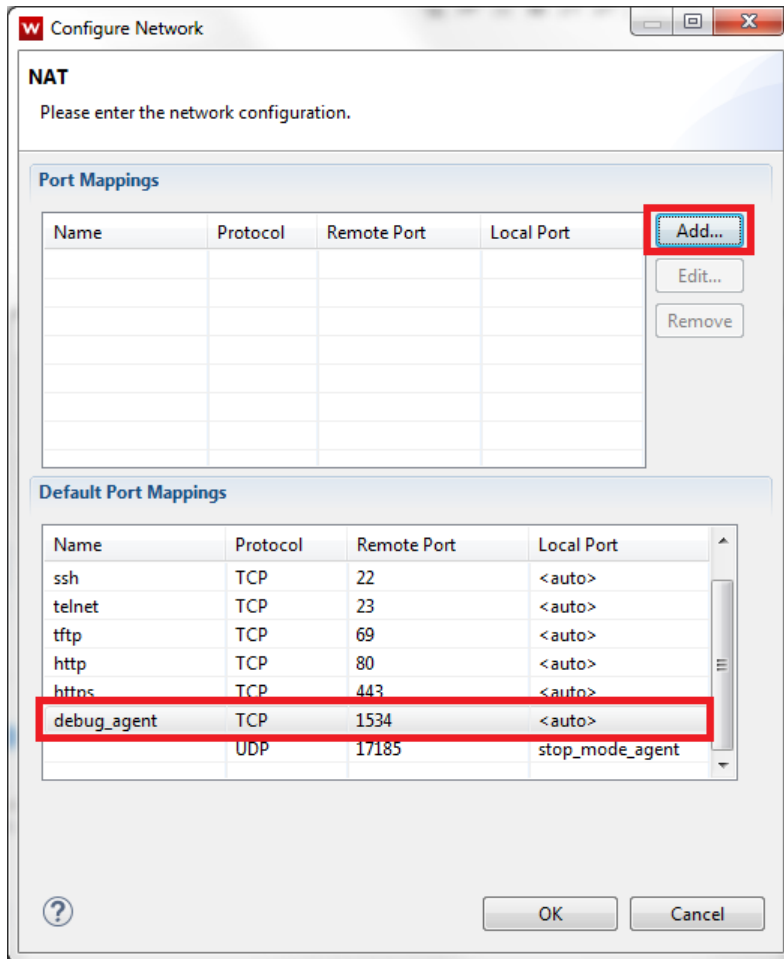
Select **Advanced** from the Connection Details configuration view to open the **Advanced Settings** dialog.



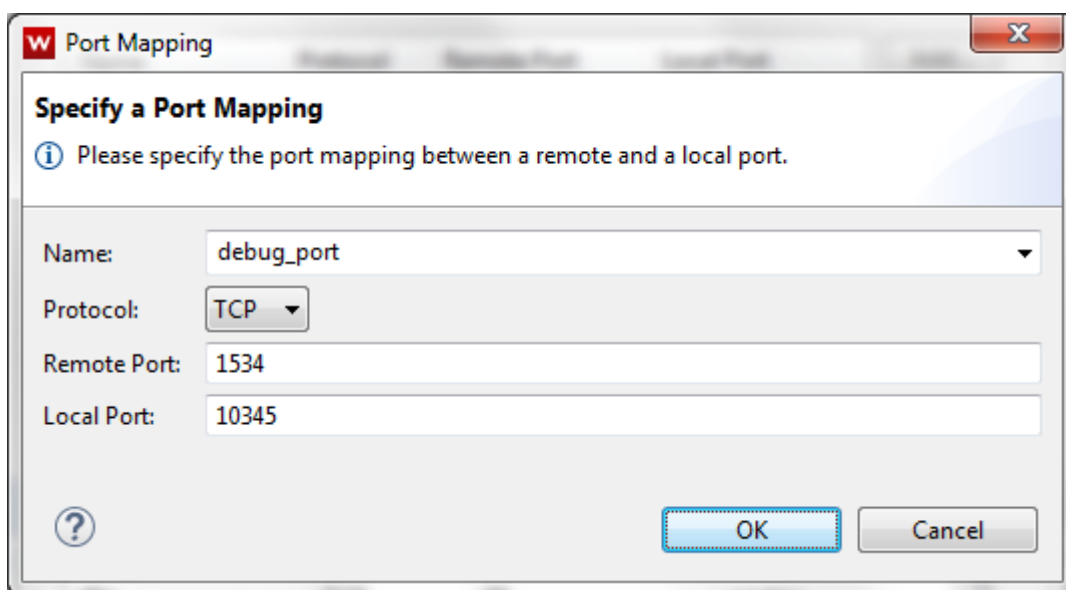
Click on **Configure...** from the NAT network configuration to open the **Configure Network** dialog.



Take a look into the lower table of the dialog. There is a line that starts with the name **debug_agent**. Now click on **Add...** to open the **Port Mapping** dialog.

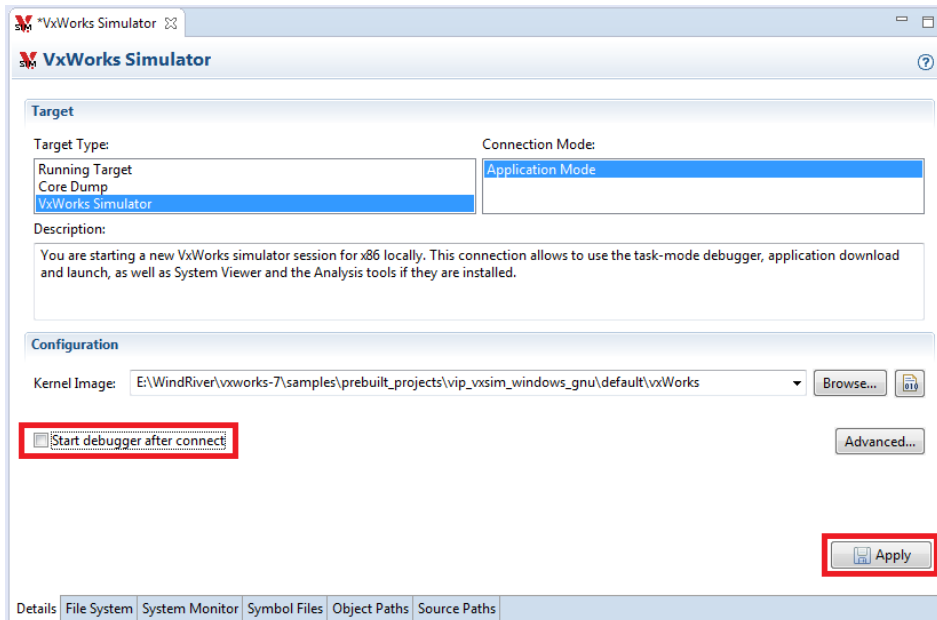


Please enter **debug_port** as name and choose as remote port the one from the **Configure Network** dialog's lower table entry.



Choose an unused port as local port and keep the number in mind. The next chapter describes the TEE setup. Click OK to accept your choice and confirm all other open dialogs in the same way by clicking OK.

You can speed up the test execution significantly if you disable the Wind River Workbench's debugger.

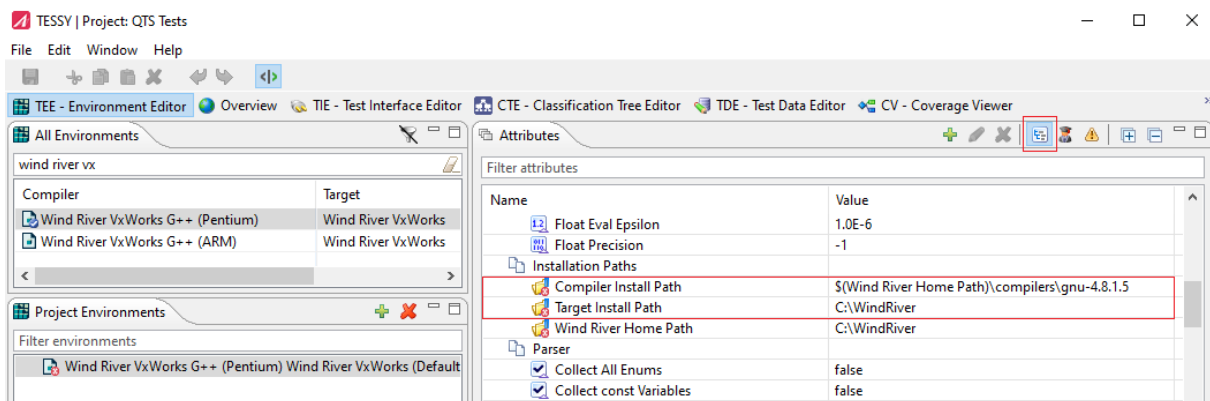


But keep in mind that **you do need the debugger for interactive test runs!**

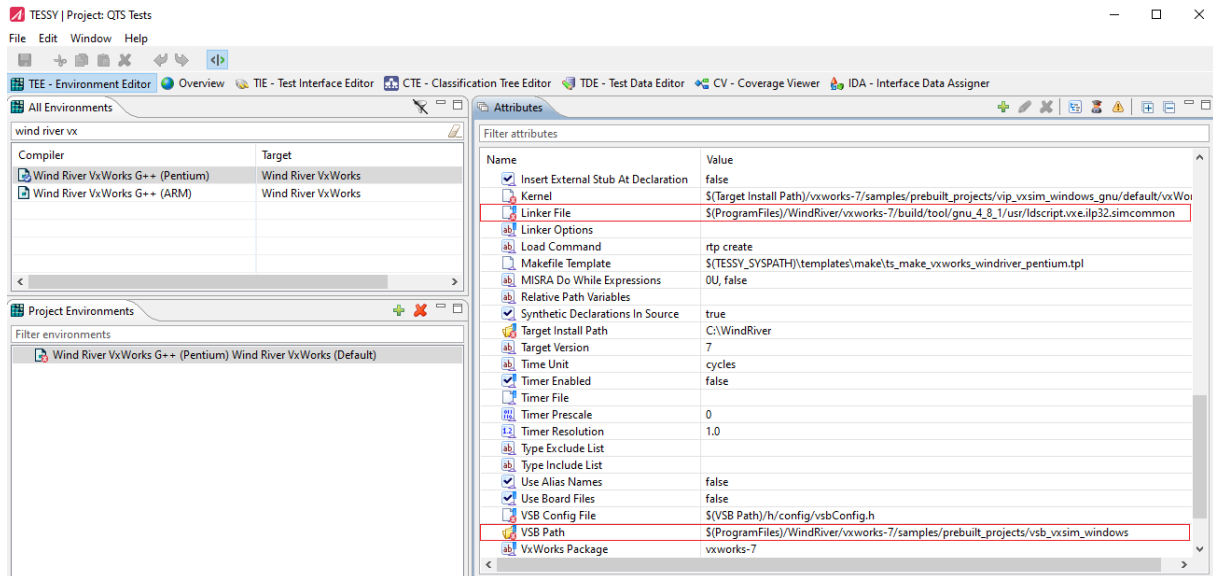
2 TESSY Environment Settings

The TEE attributes

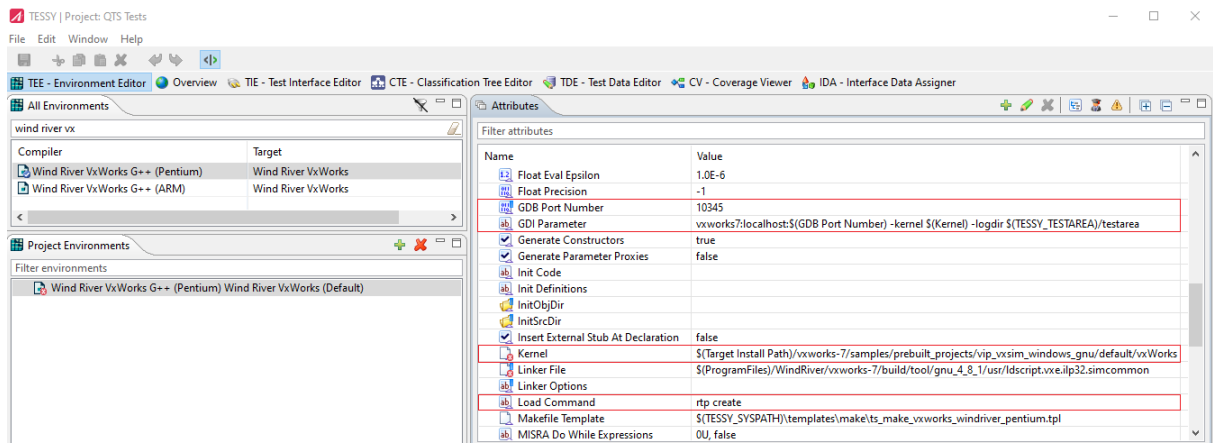
2.1 Compiler Install Path, Target Install Path



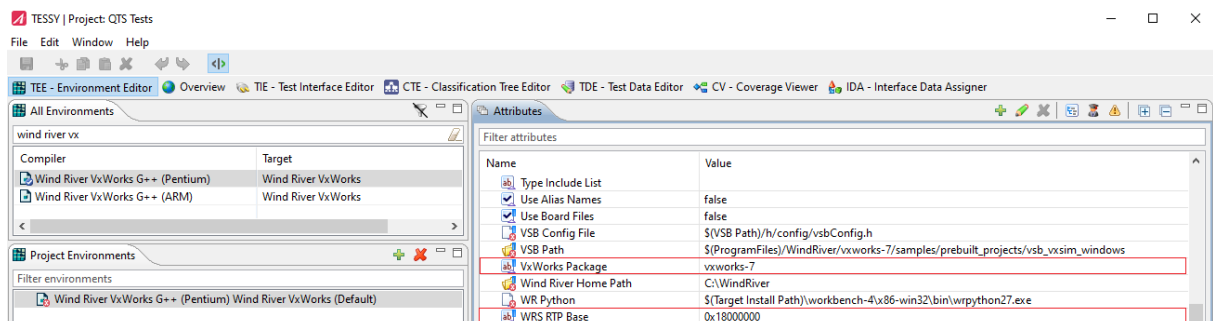
2.2 Linker File, VSB Path,



2.3 GDI Parameter, GDB Port Number, Kernel, Load Command



2.4 VxWorks Package, and WRS RTP Base

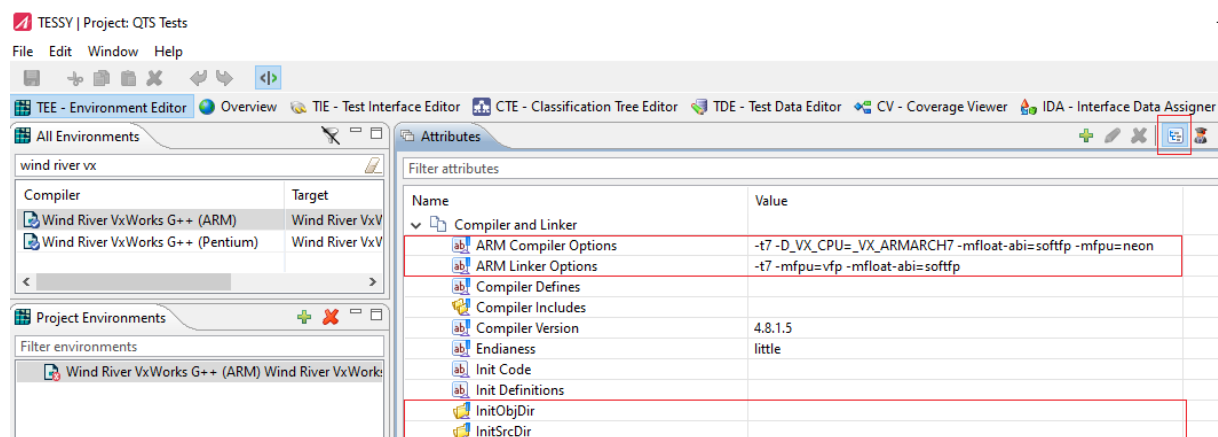


are relevant for this target adaption and have to be carefully examined. You should set **Load Command** either to *rtp create* for a real time process or to *thread create* for a kernel module to be loaded. The target adaption has been tested with real time processes. **VSB Path** contains the VxWorks Source Build path. **VxWorks Package**

contains the Wind River VxWorks package name to be used for wrenv.exe. At the time of writing of this document the latest version was vxworks-7. Other packages may also work. For the latest tested version of Wind River VxWorks refer to the compiler target map on our webpage at <http://www.razorcat.com>. You should not need to modify the attribute **GDI Parameter** unless you choose to use another Wind River VxWorks package. The attribute **GDB Port Number** gets the local port number you have chosen within the **Port Mapping** dialog of the Wind River Workbench (see 1.1).

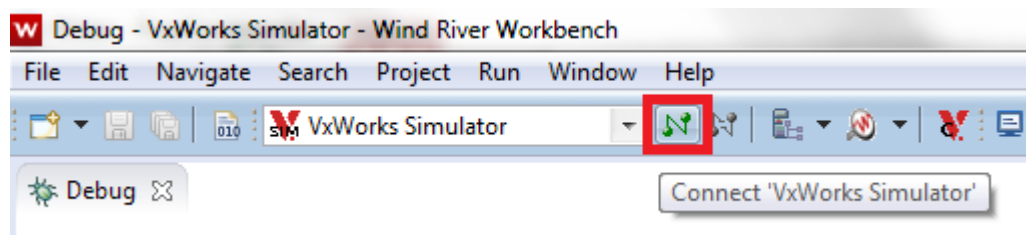
2.5 ARM specific attributes

For the ARM target board, it might be necessary to link special startup code to the target program. TESSY provides the attributes **InitSrcDir**, **InitObjDir**, and **Use Board Files** to cope with this situation. If **InitSrcDir** contains a valid path all files contained in the specified folder are compiled into the folder pointed to by **InitObjDir**. If the attribute **InitSrcDir** is empty all object files found in the folder which **InitObjDir** points to are linked to the target program. You may as well adjust some specific ARM compiler and linker options with the attributes **ARM Compiler Options** and **ARM Linker Options**. These options are added to the general compiler and linker options used in the Makefile template.



3 Test Run

Before you start the test run from TESSY you have to connect your Wind River Workbench to Wind River VxWorks.

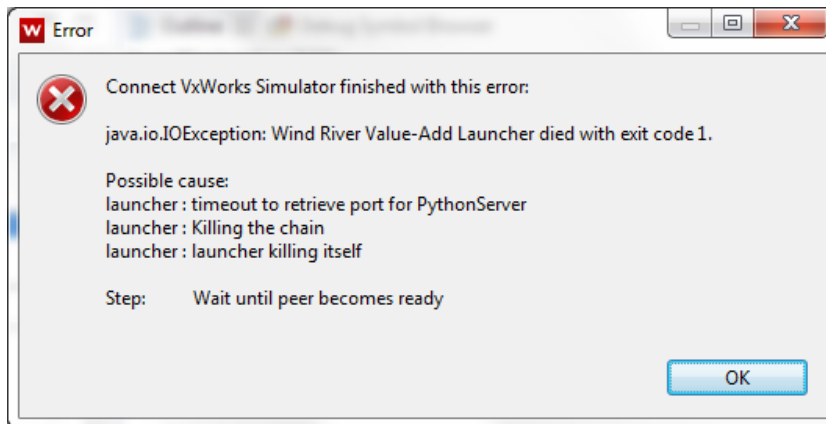


Wait until Wind River VxWorks is fully up and running. You may now start your test runs from TESSY. Please refer to the TESSY User Manual for further details.

4 Troubleshooting

4.1 VxWorks fails to start

If the startup of Wind River VxWorks ends up with the following dialog it might help to create the Microsoft Windows environment variable **WIND_LAUNCHER_TIMEOUT** and set its value to **60** or larger. Restart the Wind River Workbench and try again.



4.2 The Workbench does not open the corresponding editor

If you need to interactively debug your test object using your test data from TESSY it might happen that the editor is not opened automatically by the Wind River Workbench. Please assure that the option **Start debugger after connect** is enabled as shown below. If it is not enabled do so and click **Apply**.

