

VectorCAST RSP GHS-ARM64 Ada Integrity

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Abstract	Information on the VectorCAST Ada RSP for GreenHills Standalone ARM 64-bit

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1 Overview

A VectorCAST Runtime Support Package (RSP) is an extension of the VectorCAST product. It provides an interface layer that allows you to use the VectorCAST testing techniques and methods on an embedded target processor. The VectorCAST RSP will always run on your host platform (the same platform as the compiler). Only the VectorCAST generated test harness will be downloaded to, and executed on, the embedded target.

A VectorCAST RSP is always customized to a particular Target CPU, Cross Compiler, and Run-Time environment (or kernel). As such, the information presented here contains sections for this specific RSP.

This application note provides details on configuring VectorCAST to test GreenHills Integrity application code using the GreenHills ARM 64-bit Ada compiler running on the GreenHills Integrity Simulator. The GreenHills compiler is used to build the VectorCAST test harness.

2 Setup

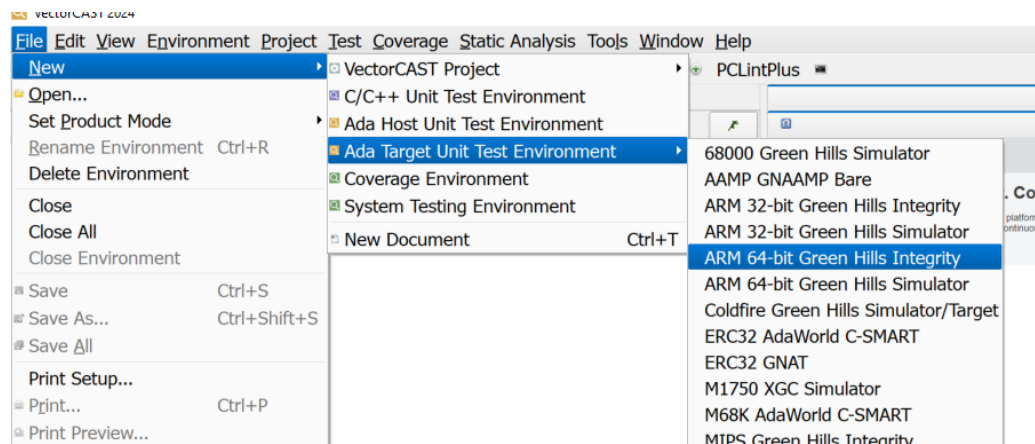
2.1 Environment Setup

Before launching VectorCAST for the GreenHills Ada compiler, the path environment variable needs to be set up to point to the GHS Debugger (Multi) and Compiler. Also, the VC_GHS_OS_DIR variable must be set to point to the location of the Integrity installation. This variable is referenced by the RSP. It is suggested to create a DOS batch file or Linux script to set all this up and then launch VectorCAST from that script. For Windows it would look something like this, depending on the version of the tools:

- 1) set VECTORCAST_DIR=c:\vcast
- 2) set VC_GHS_MULTI_DIR=C:\GHS\adamulti_716i
- 3) set VC_GHS_COMP_DIR=C:\GHS\comp_202214
- 4) set VC_GHS_OS_DIR=c:\ghs\int1178
- 5) set path=%VECTORCAST_DIR%;%VC_GHS_COMP_DIR%;%VC_GHS_MULTI_DIR%;%path%
- 6) vcastqt.exe

2.2 Building an Environment

Launch VectorCAST using the batch file created in the prior step. Then, decide on a work area where you want to do your test development. Typically, you'll want to start with an empty directory outside of the VectorCAST installation directory, so it won't be affected by future product upgrades. Then, set the working directory by doing File->SetWorkingDirectory and point to your work area. Once the working directory is set, you can create a new test environment using ARM 64-bit Green Hills Integrity, as follows:



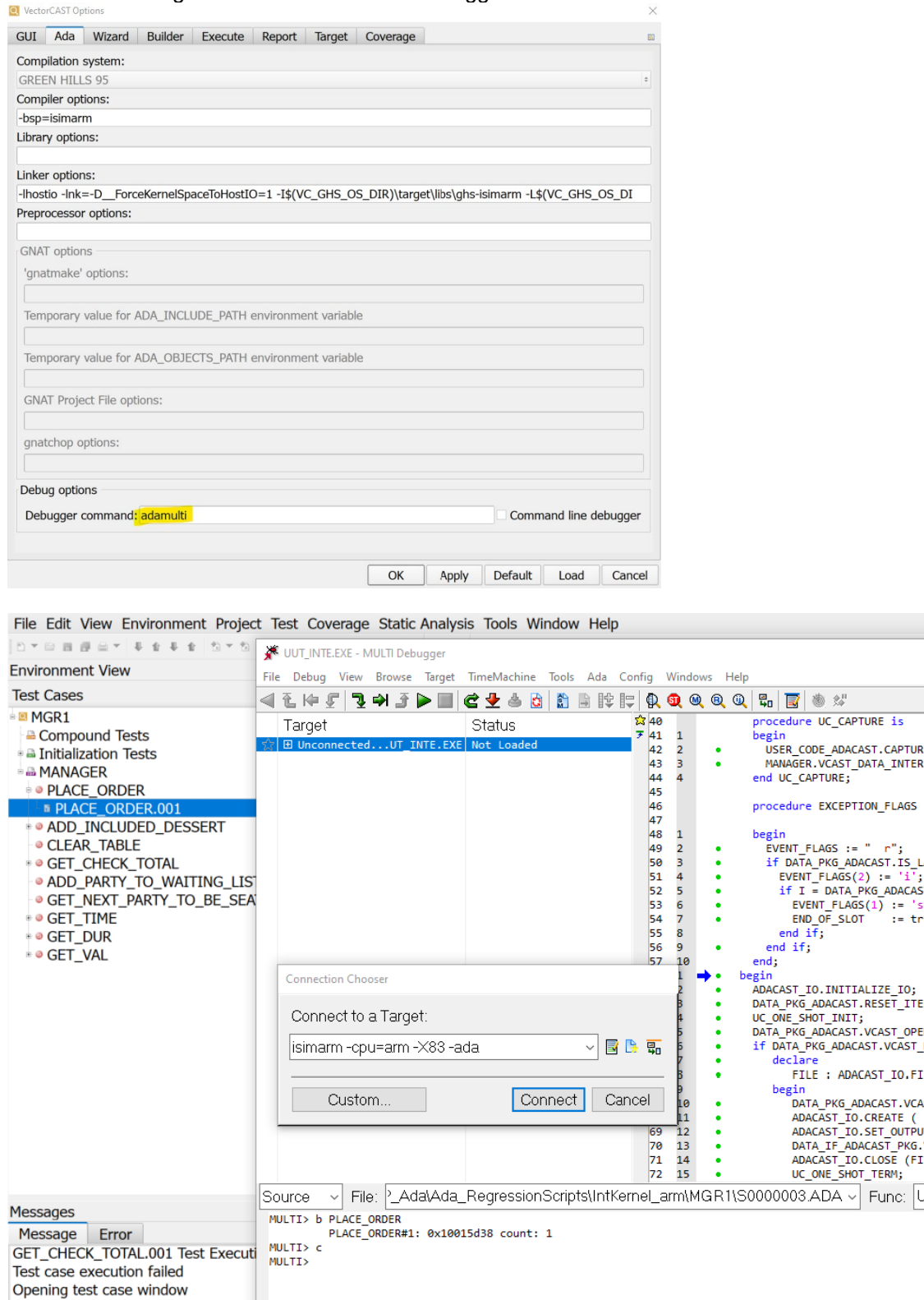
You should then see a pop-up window with 7 steps. Enter the options as follows:

- 1) Leave as-is
- 2) Enter a name for the environment
- 3) Select Whitebox and leave the Coverage Type as None
- 4) Select the directory that contains the Ada.lib file for your source code. If you don't have an Ada.lib file, you'll first need to build your code outside of VectorCAST.
- 5) In the left column, double click on the Unit Under Test. This will move it over to the SBF node in the right column
- 6) Leave as-is
- 7) Leave as-is

Then, select the Build Button and this should build the environment. If the build is successful, you can then start developing your tests.

2.3 Debugging

If a test case does not execute properly, you can use the GreenHills Multi debugger directly from the VectorCAST GUI. Go to Tools->Options->Ada and enter "adamulti" for the debugger command. Then, click on the test case and do RightMouse->ExecuteWithDebug. That should load the test harness in the debugger and show the first executable line. You can then set a break point in the Unit Under Test and press the "go" button. At that point, you will get a pop-up asking for a connection method. Select "isimarm64" and Connect and you should hit your breakpoint. Here are a screen shots of the configuration window and the debugger window:



3 Additional Resources

For help with writing test cases, refer to the VectorCAST/Ada manual from the Help Menu pulldown in VectorCAST.

4 Trademarks

All mentioned names are either registered or unregistered trademarks of their respective owners.

5 Contacts

For a full list with all Vector locations and addresses worldwide, please visit <http://vector.com/contact/>.