

	SSE-300 FVP MPS3 CMSIS Pack User Guide
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Contents

Introduction	2
Prerequisites.....	2
Pack Installation – Keil MDK.....	2
Import and build the example Blinky project – Keil MDK.....	3
Run and debug Blinky example – Keil MDK.....	3
Pack Installation – Arm Development Studio	5
Import and build the example Blinky project – Arm Development Studio	6
Run and debug Blinky example – Arm Development Studio.....	6

Introduction

This document is a general guide to use the SSE-300 MPS3 FVP (Fixed Virtual Platform) CMSIS pack. The CMSIS pack is to be used with the Corstone-300 platform MPS3 FVP model. The pack contains necessary source files, a linker script file, and a specification document to kick start development for the Corstone-300 MPS3 platform. It also contains a reference secure-side Blinky example to enable a user to understand uVision project configuration. The pack also provides a System View Description (SVD) file for the platform to be used with the uVision debugger.

This document specifies system prerequisites and explains how to build and run the reference Blinky example on the SSE-300 MPS3 FVP model.

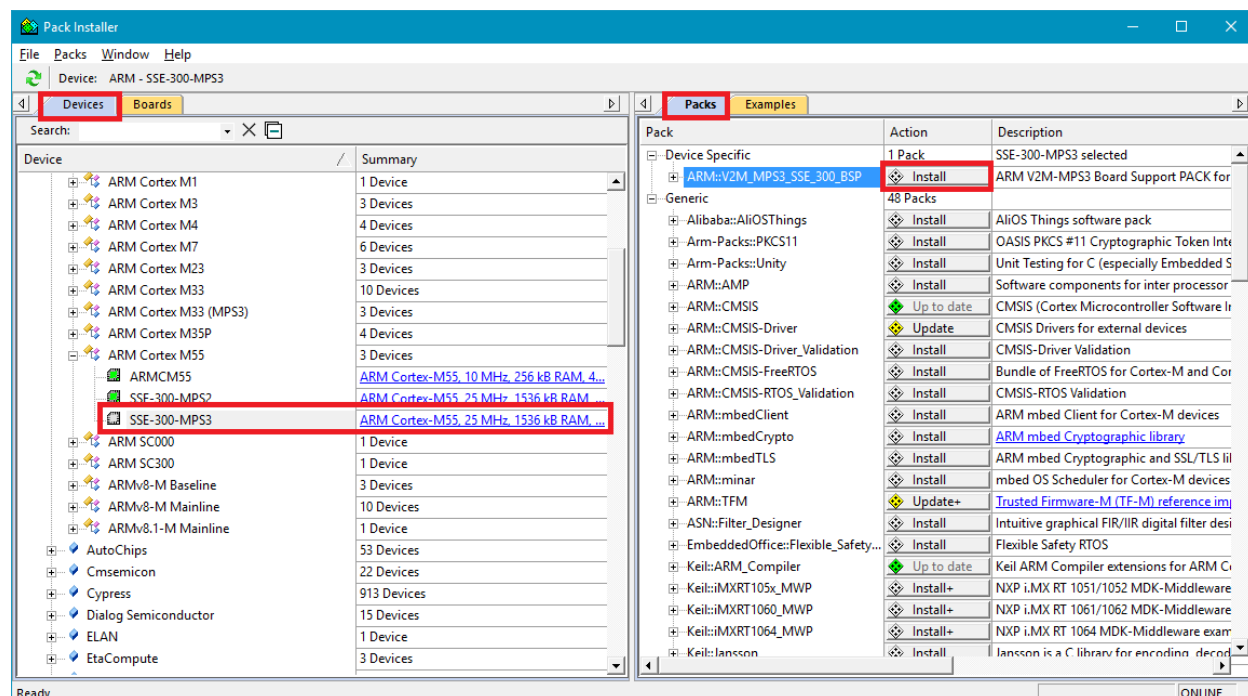
Prerequisites

Note: At time of creating this document, the FVP model is only available for Linux, but expected to be available for Windows soon. Because of this, the debug and run part refers to a state when the model is available. Until then, the build is possible on Windows, but run and debug is only supported on Linux.

- (Windows) Minimum [Keil MDK v5.30](#)
- (Windows) Download and install [Corstone SSE-300 MPS3 FVP](#) model.
- (Linux) Minimum [Arm Development Studio 2020.1](#).
- (Linux) Minimum [Arm Compiler 6.14.1](#).

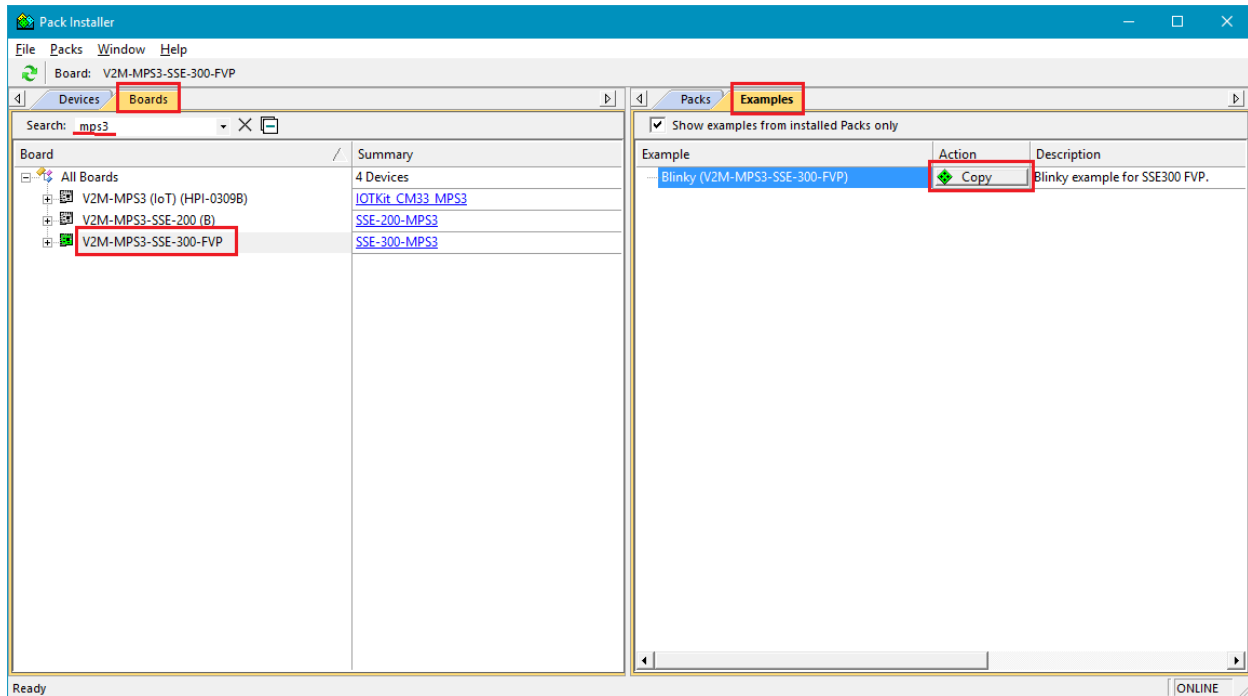
Pack Installation – Keil MDK

Install ARM::V2M_MPS3_SSE_300_BSP using the Pack Installer. The pack can be browsed by selecting SSE-300-MPS3 device under ARM Cortex M55 Devices.



Import and build the example Blinky project – Keil MDK

Copy the Blinky project using the Pack Installer. The example project can be found by searching and selecting V2M-MPS3-SSE-300-FVP Board under the Boards section.



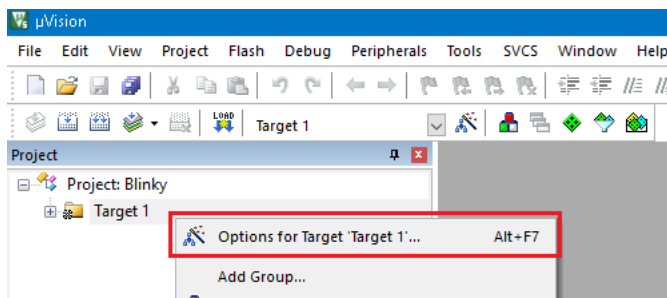
Once copied, open the Blinky project using the uVision and simply build the Target1 listed inside Project Explorer.

Run and debug Blinky example – Keil MDK

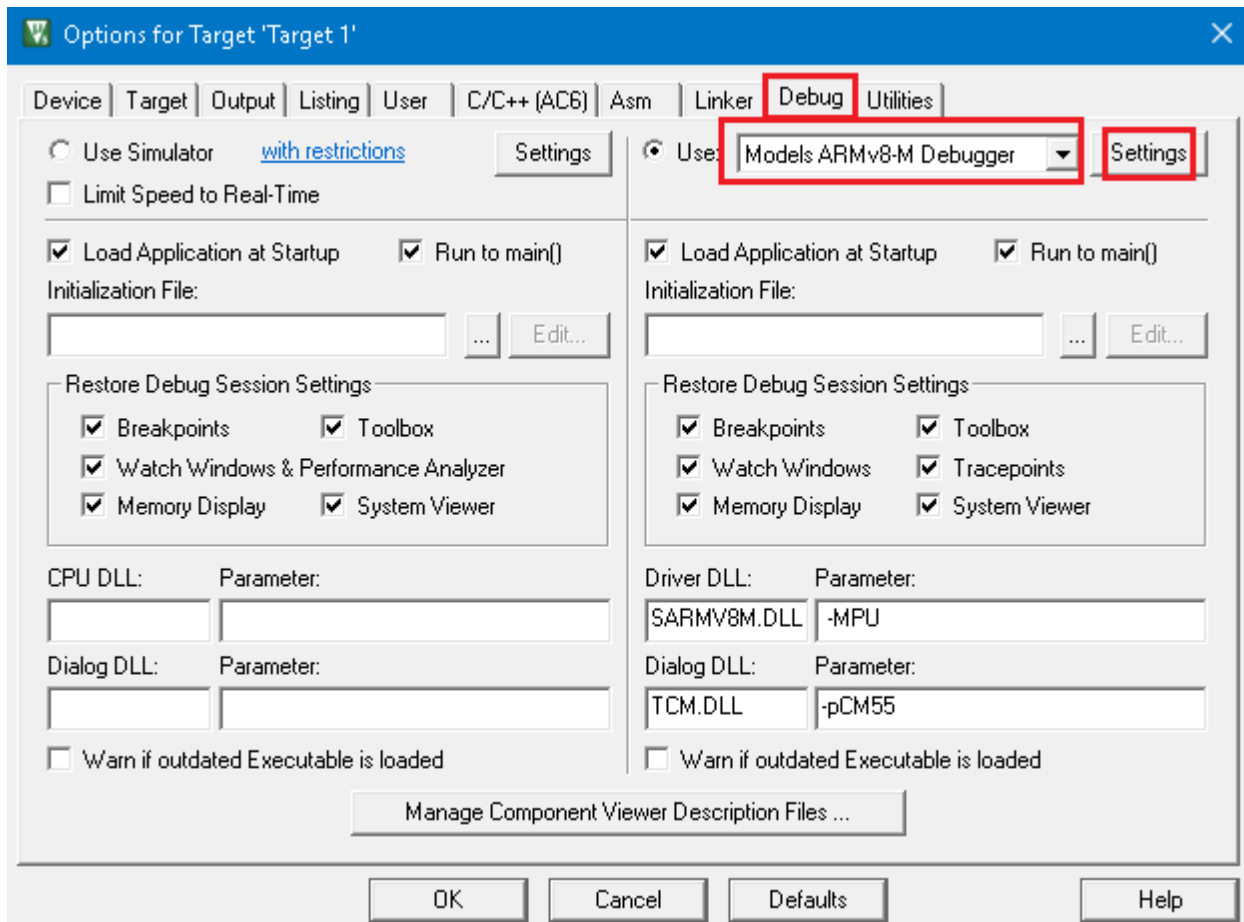
This section explains how to run the Blinky example on the Corstone SSE-300 FVP model. First, download and install the SSE-300 FVP from the link provided in the prerequisite section.

To run and debug the example using the FVP, follow the steps below inside the uVision software.

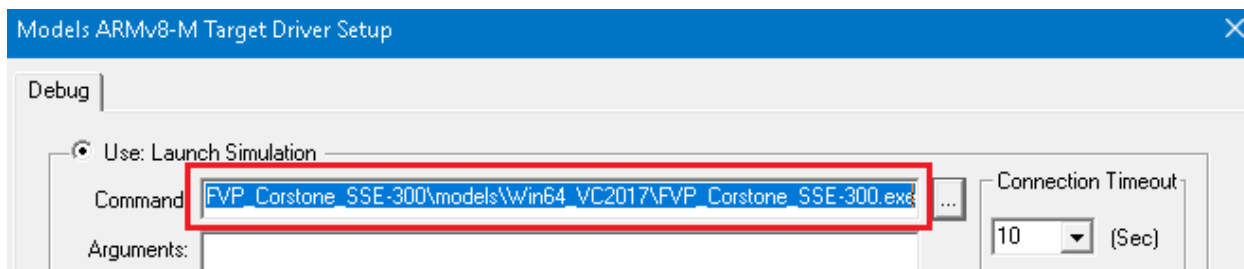
Right click on the Target1 and click on “Options for Target ...”.



Click the Debug tab to open the debug settings. In the drop-down selection for the debugger, select “Models ARMv8-M Debugger”, then click the Settings button next to it.



You should have the “Models ARMy8-M Target Driver Setup” box open. Browse to the SSE-300 FVP executable which is present inside the installation directory.



Click OK and save the changes.

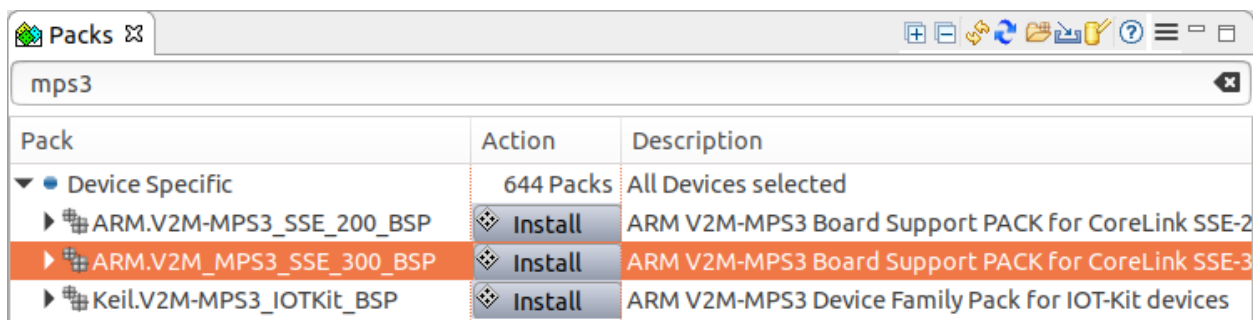
Build the target if it is not built, and then click the debug button at the top to start a debug session.



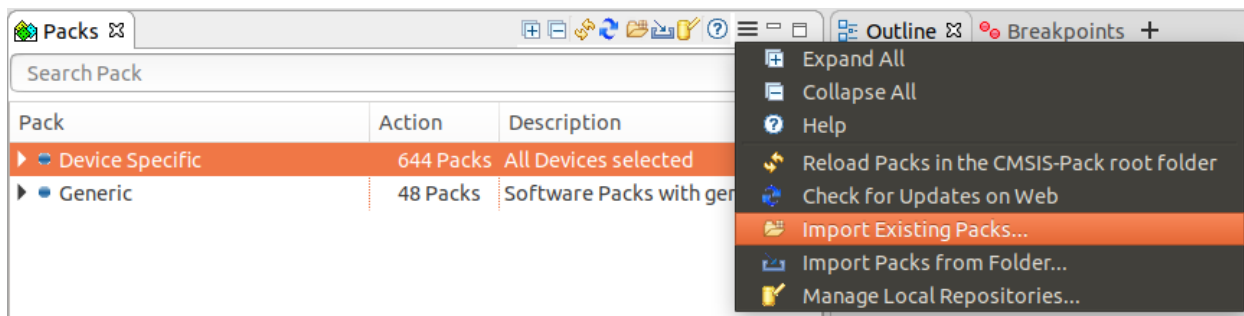
The FVP window should pop up with code stopped at the entry breakpoint. On starting code execution, the LEDs in the FVP display can be seen to blink cyclically. You can use the debugger to stop, step, and set breakpoints inside the code.

Pack Installation – Arm Development Studio

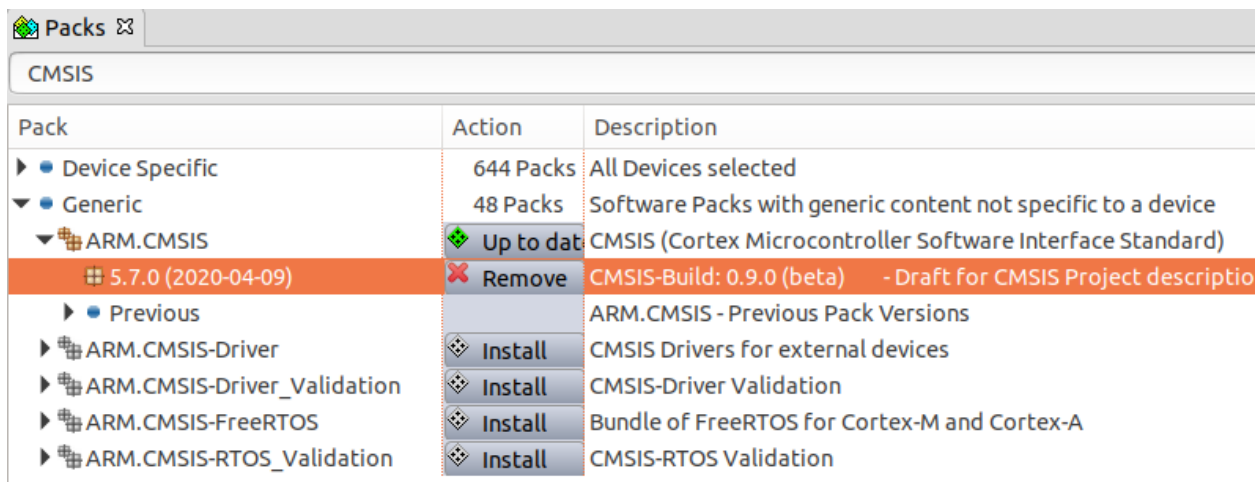
You can Install ARM.V2M_MPS3_SSE_300_BSP using the Packs window. The pack can be found easily by searching for mps3.



If the pack is not available in the list, download the Arm V2M-MPS3-SSE-300-FVP pack, from [Keil](#). Use the Packs window -> menu -> Import Existing Packs... option. Browse the downloaded pack file, then install it as shown in the previous step.

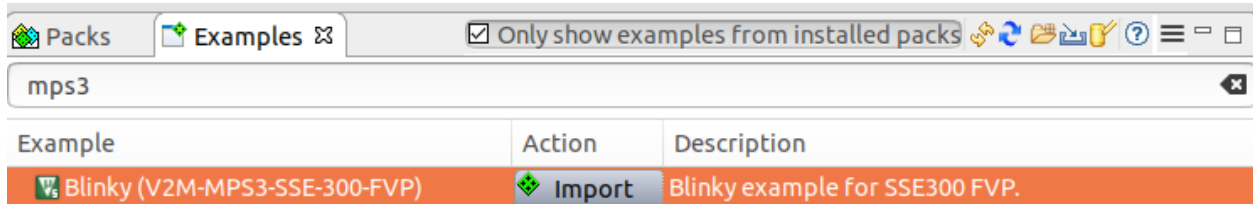


Within the same window, ensure that ARM.CMSIS 5.7.0 Pack is installed. If it is installed, there will be a Remove button, if it is not installed there will be an Install button.



Import and build the example Blinky project – Arm Development Studio

Import the Blinky project using the Examples window. The example project can be found by searching 'mps3' and clicking import on Blinky (V2M-MPS3-SSE-300-FVP).



A window will pop up, please select Target 1 and click Finish.

To build the project, there is a Makefile provided. Open a terminal, go to the project directory, then build with the command 'make'. The results will be generated to the 'build' directory.

Note: If the Arm Development Studio is not installed to the default location, it might be necessary to provide the keil pack folder path to the Makefile, for example:

```
make PACK_DIR=/home/$USER/.cache/arm/packs
```

Run and debug Blinky example – Arm Development Studio

Open a terminal, go to the project directory. Build the example project if not done previously.

The FVP can be launch with the command:

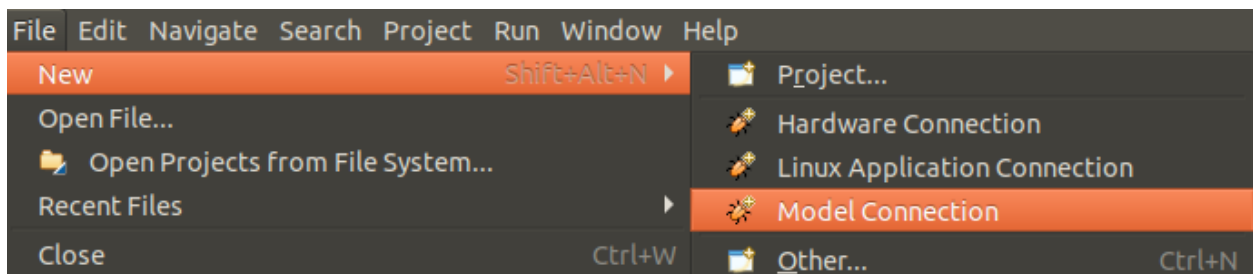
```
<path_to_fvp>/FVP_Corstone_SSE-300_Ethos-U55 -a build/Blinky.axf
```

To start it with debug server:

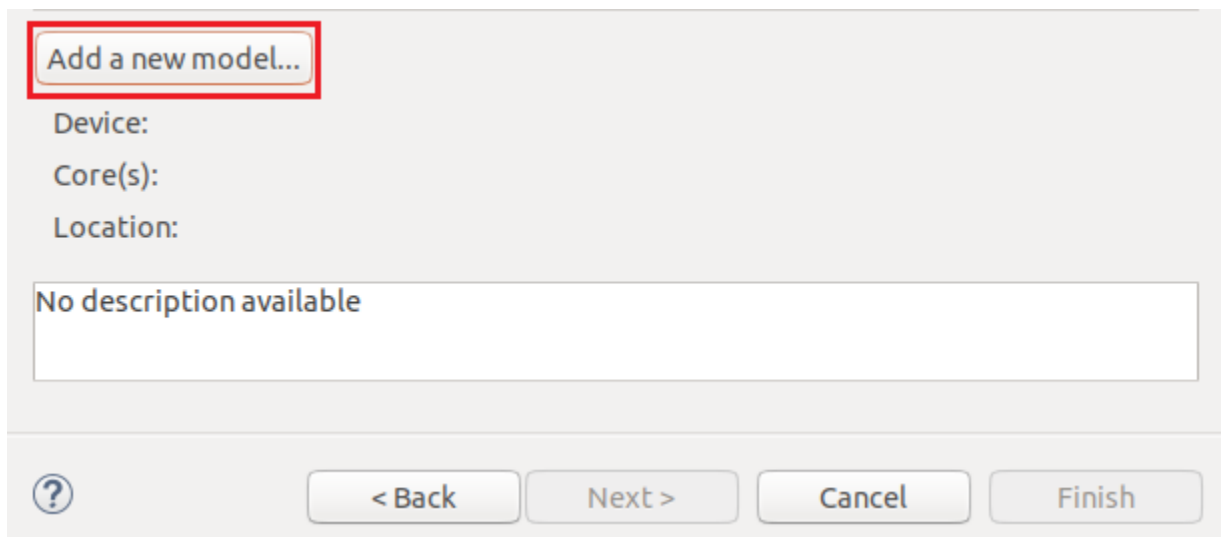
```
<path_to_fvp>/FVP_Corstone_SSE-300_Ethos-U55 -a build/Blinky.axf -I -p
```

When launched with a debug server, it is possible to connect the FVP from Arm Development Studio. First, start the FVP with the debug server.

Create a new Debug Connection (File -> New -> Model Connection). Give it a name and click Next.

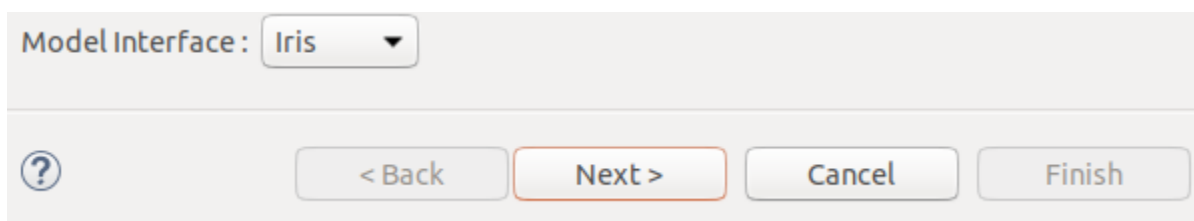


At Target Selection, click Add a new model...



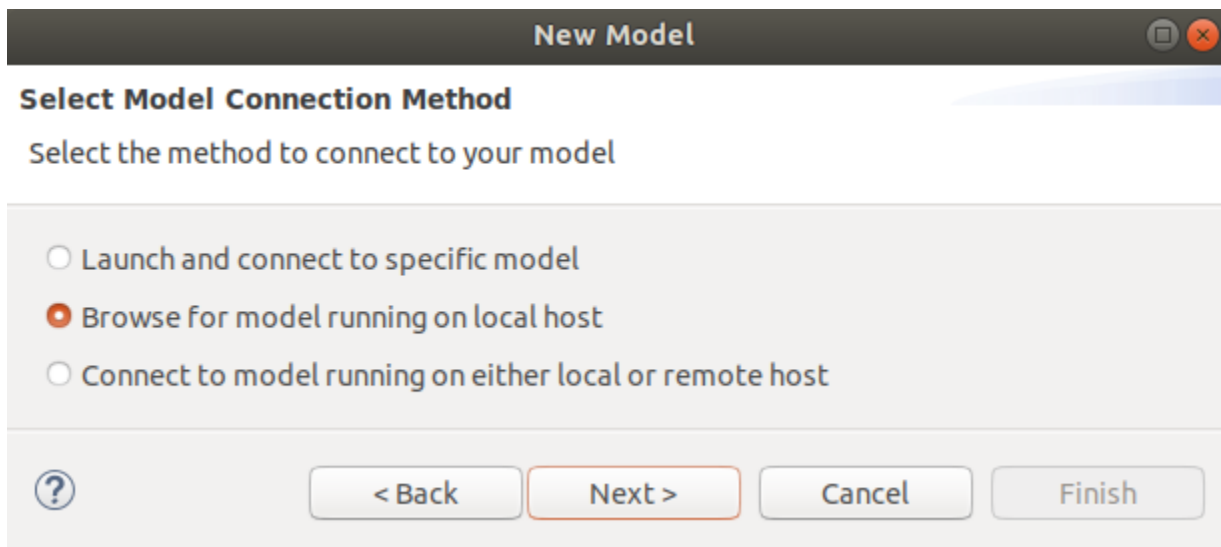
The screenshot shows a dialog box with a red border around the title bar. The title bar contains the text "Add a new model...". Below the title bar, there are three labels: "Device:", "Core(s):", and "Location:". Below these labels is a text area containing the text "No description available". At the bottom of the dialog box, there is a row of four buttons: a help button (question mark icon), "< Back", "Next >", "Cancel", and "Finish".

In the popup window, select Model Interface : Iris, then click Next:



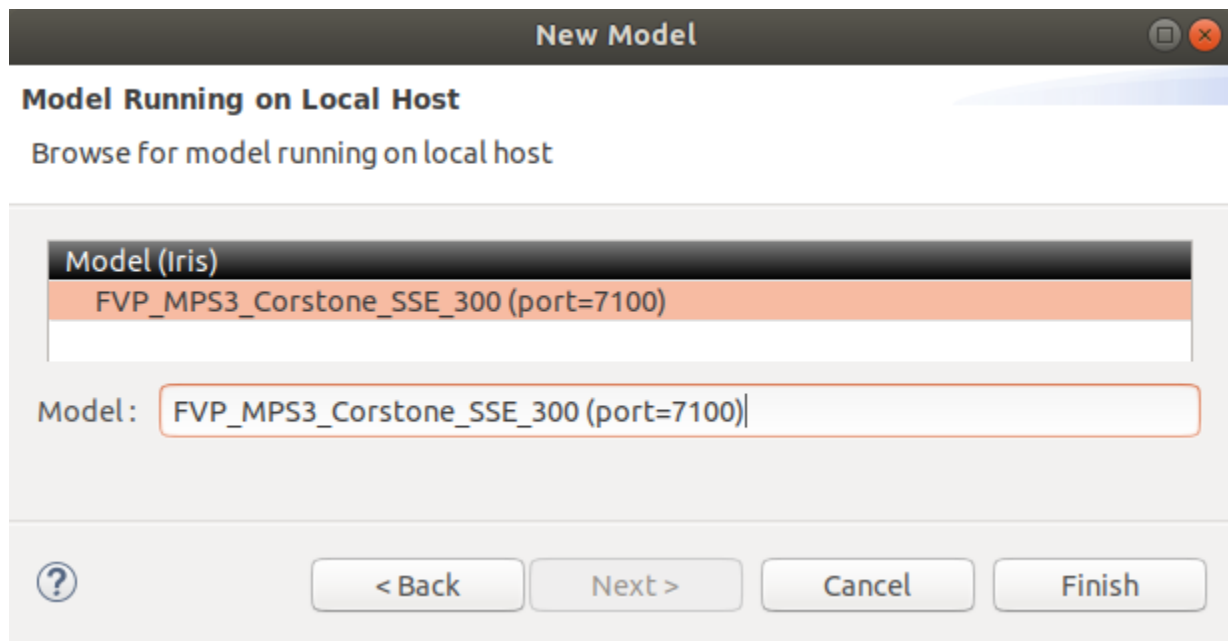
The screenshot shows a dialog box with a title bar. The title bar contains the text "Model Interface : Iris". Below the title bar, there is a row of four buttons: a help button (question mark icon), "< Back", "Next >", "Cancel", and "Finish".

Select Browse for model running on local host:



The screenshot shows a dialog box titled "New Model". Below the title bar, there is a section titled "Select Model Connection Method" with the subtitle "Select the method to connect to your model". Below this section, there are three radio buttons: "Launch and connect to specific model", "Browse for model running on local host" (which is selected), and "Connect to model running on either local or remote host". At the bottom of the dialog box, there is a row of four buttons: a help button (question mark icon), "< Back", "Next >", "Cancel", and "Finish".

Select FVP_MPS3_Corstone_SSE_300 (port=7100) from the list and click Finish:



The window will close. Click on the Finish button in the parent window. In the next window, the debug configuration can be fine-tuned, but it is ready for debug in its current form. You can click Debug to connect to the FVP and start to debug:

