ECE/CSE 474:
Intro to Embedded Systems

Creating Projects in IAR Workbench (Windows)

Creating a new project in IAR Workbench for ARM version 8.11.3

1. Video Tutorial

The video tutorial located here will teach you how to create and configure a new C project in IAR Embedded Workbench and help you get more familiar with the debugger environment included in the software: https://www.youtube.com/watch?v=cLbaSFKdAho

Note: this video focuses on introducing how to debug a project using an older version of this software and an older version of the TIVA board. The table below shows the updated instructions by timestamps for the new software and the new board. For how to create a workspace and add projects to a workspace for each EE/CSE 474 lab, please refer to section 2 of this document.

Timestamp	Old Instructions in the video	Updated Instructions
2:50	Choose TM4C123GH6PM	Choose **TM4C1294NCPDT**
3:22	Under C dialect: choose C89	Under C dialect: choose **C11**
4:55	Click  (Download and Debug)	Click  (Download and Debug)
5:20	Choose View -> Memory	Choose **View -> Memory -> Memory 1**
5:31	Choose View -> Register	Choose **View -> Registers -> Registers 1**
6:00	Click  (Step Into)	Click  (Step Into)
6:10	Click  (Stop Debugging)	Click  (Stop Debugging)
7:40	Click  (Toggle Breakpoint)	Click  (Toggle Breakpoint)
10:13	Click  (Go)	Click  (Go)

2. Project Setup

The instructions below include everything you need to set up a new project in version 8.11.3.

2.1 Create a new workspace

1. Open IAR workbench.
2. Go to File -> Save Workspace As...
3. Create a new folder in your working directory for your current workspace and save the workspace file (.eww) into the folder. Name the folder and the workspace file as the current lab. (e.g., lab1.) This will be your **workspace folder**.

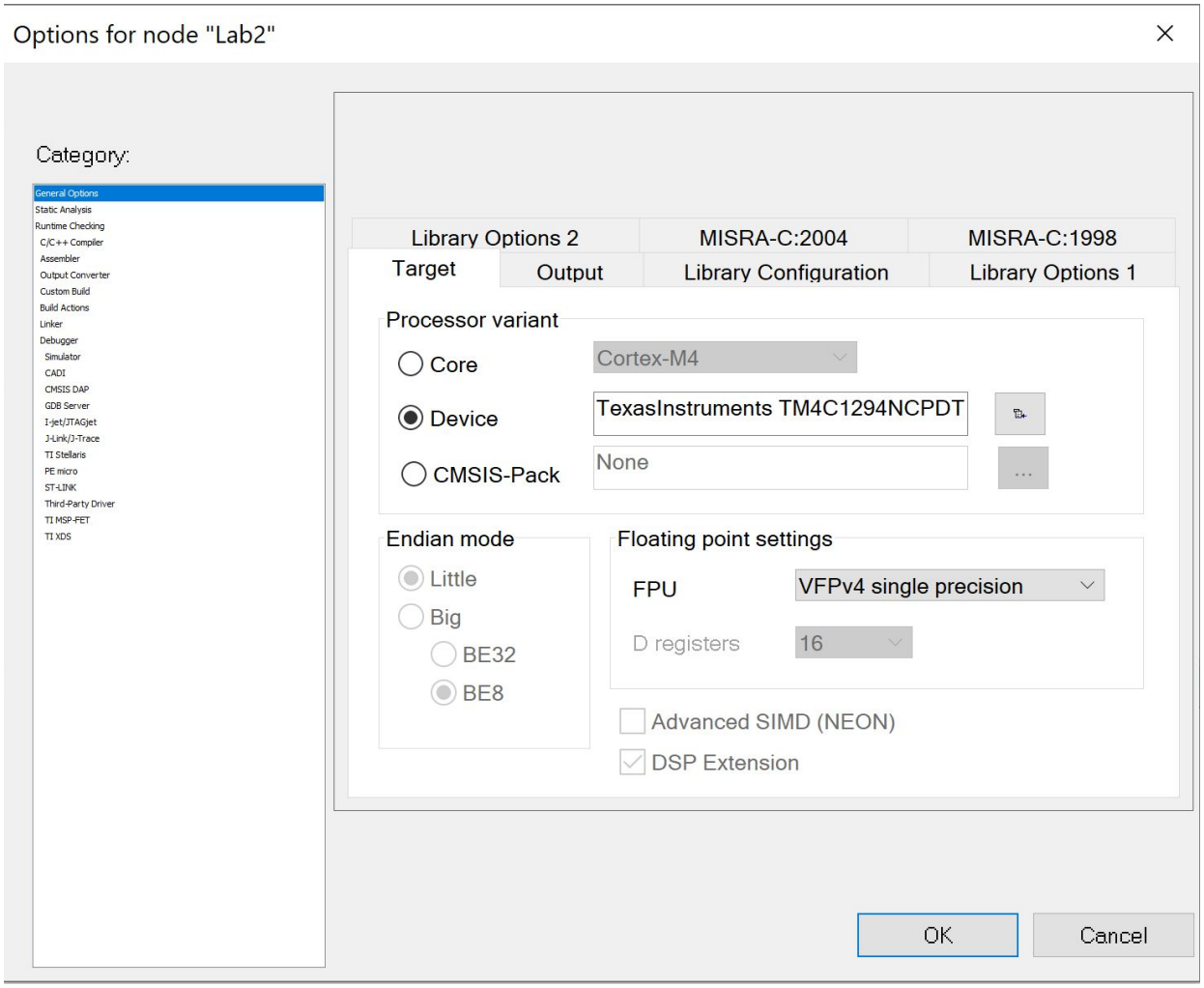
2.2 Add a new project to the current workspace

1. Go to Project -> Create New Project -> Empty project, then ok.
2. Create a subfolder in your **workspace folder** for the specific task you are working on and save the project file into this subfolder. Name the folder and the project file as the subtask you plan to do. (e.g., task1a.) This will be your **project folder.**
3. An empty project will be created as a result. To add files to the project (such as main.c), refer to section 2.4.

2.3 Configure project settings

Locate the current project on the left under the Workspace panel. Right-click the project and choose click options:

1. Navigate to General Options -> Target
    a. Select “Device” and click the icon to the right (shown highlighted in the figure below)
    b. Select TexasInstruments -> TM4C -> TM4C1294NCPDT
2. Navigate to General Options -> Library Configuration
    a. Select “Full” from the drop-down menu under “Library:”
3. Navigate to Debugger -> Setup
    a. Select “TI Stellaris” from the drop-down menu under “Driver:
4. Go to Project -> Options... -> C/C++ Compiler -> Optimizations
    a. Select “Low” under “Level”



2.4 Add new files to your project

When you create new files to add to your project, select “New File” from the “File” menu, and then save the file in your **project folder**. Then, right-click the current project in the “Files” panel of IAR Workbench, and add the new file to the project by going to “Add” in the drop-down menu.

2.5 Workspace and project organization

IAR Workbench uses the idea of “workspace” to organize your projects. We recommend that you create a new workspace for each lab. Typically, each lab consists of multiple subtasks, and thus we recommend that you follow section 2.2, 2.3, and 2.4 to create a new project (.ewp) for each new subtask. In other words, for each lab, you should have one **workspace folder** that contains your workspace file (.eww) and multiple **project folders**. Each **project folder** should contain a project file (.ewp) and all the code files for the specific subtask of the lab.