

# Quartus Project Setup

Last updated 3/7/20

# Quartus Project Setup

- Quartus Prime – Project Setup
  - Before creating your first Quartus project:
    - Install the Quartus software – see “Quartus Software Setup”
    - Projects are created for a top level design
      - Create a project directory to keep all of your projects organized
        - Eg.     .../HDL/Quartus\_Projects
  - **Your project folder should be placed somewhere in your personal folder path – Not in the Quartus installation directory**

# Quartus Project Setup

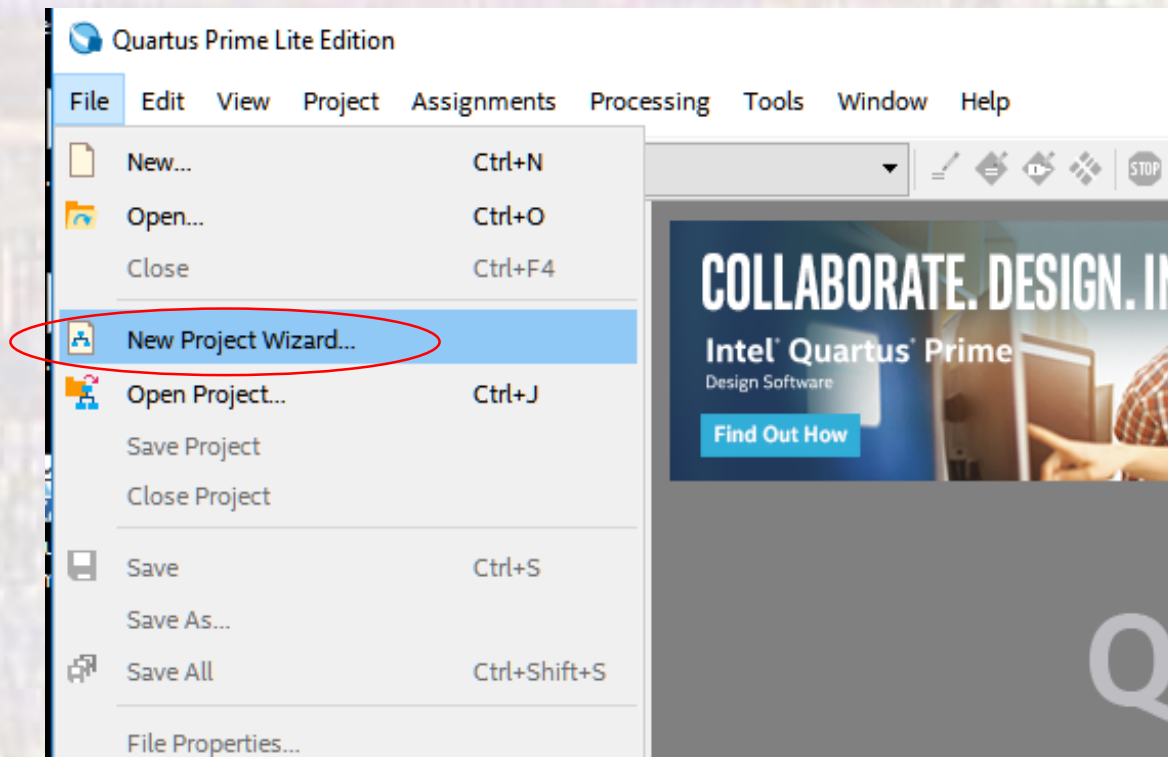
- Quartus Prime – Project Setup
  - Quartus uses directories to store projects in
    - Create a separate directory for each project
      - Eg. `.../HDL/Quartus_Projects/MyFirstDE10Project`

No spaces in the directory path

It's best to not use any special characters in the project folder name

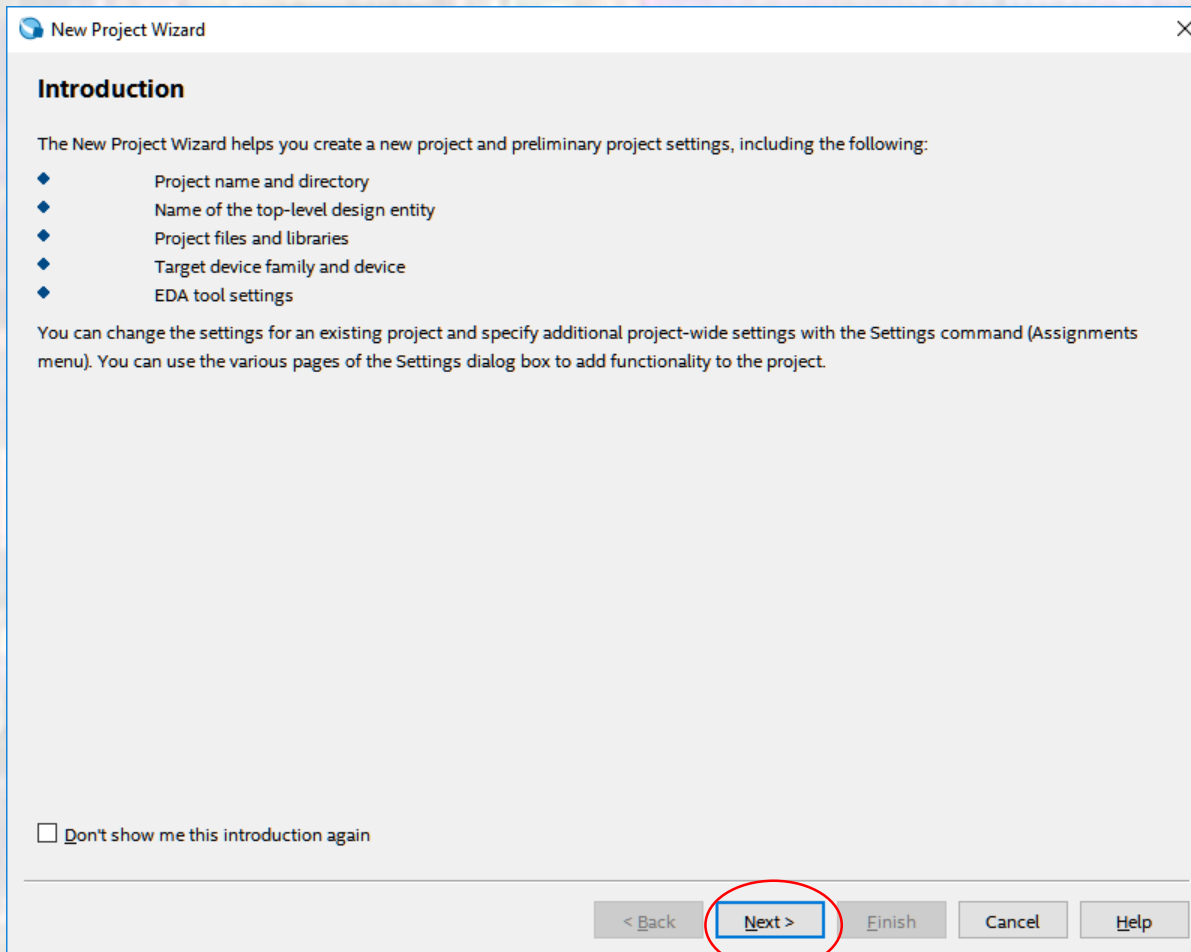
# Quartus Project Setup

- Quartus Prime – Project Setup
  - Start the Quartus software
  - Under **File** – select **New Project Wizard ...**



# Quartus Project Setup

- Quartus Prime – Project Setup
  - Select **Next**



# Quartus Project Setup

- Quartus Prime – Project Setup
  - Select your project directory
  - Name your project
  - Your project name and top level entity name should be the same

**New Project Wizard**

**Directory, Name, Top-Level Entity**

What is the working directory for this project?

C:/ . . . /Projects/MyFirstDE10Project

What is the name of this project?

MyFirstCounter

What is the name of the top-level design entity for this project? This name is case sensitive and must match the design file.

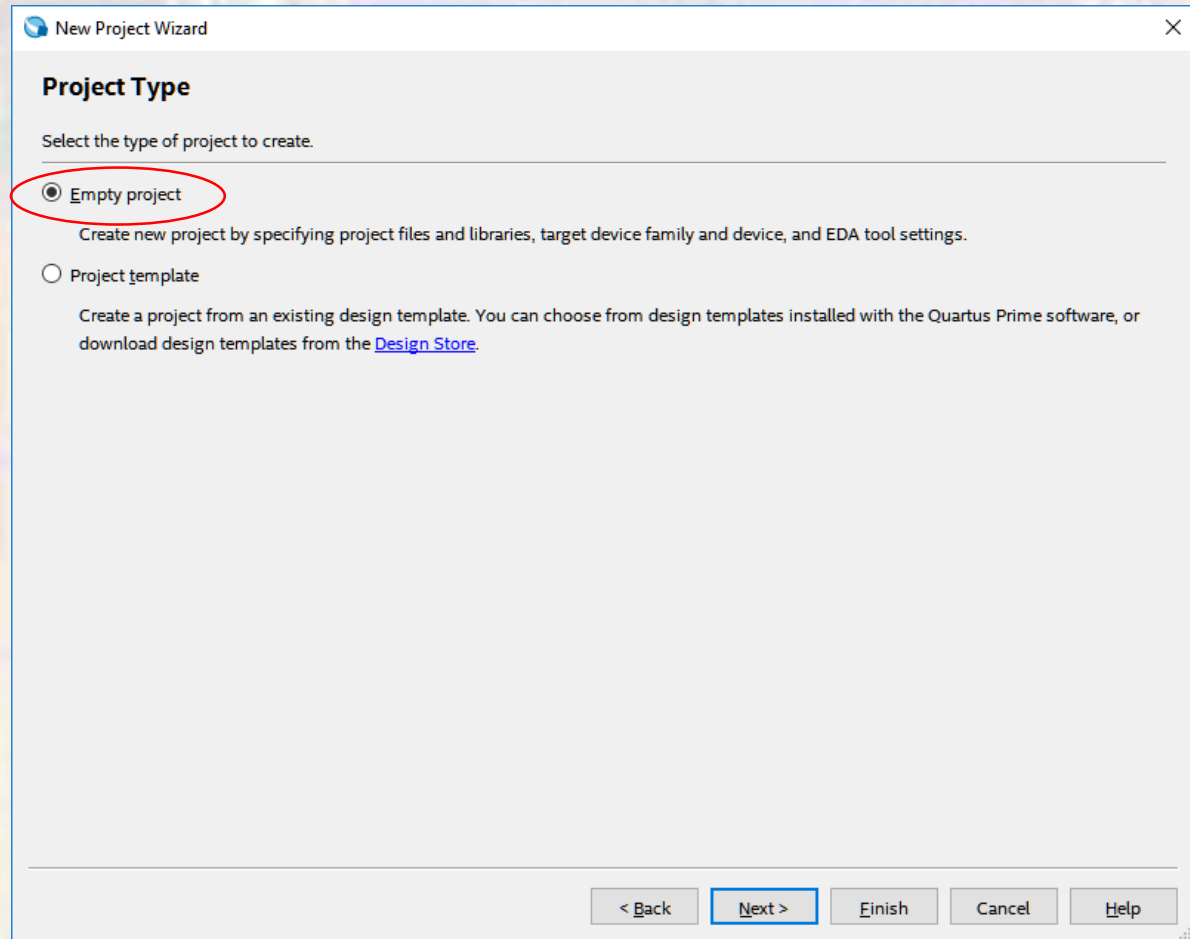
MyFirstCounter

[Use Existing Project Settings...](#)

- Click **Next**

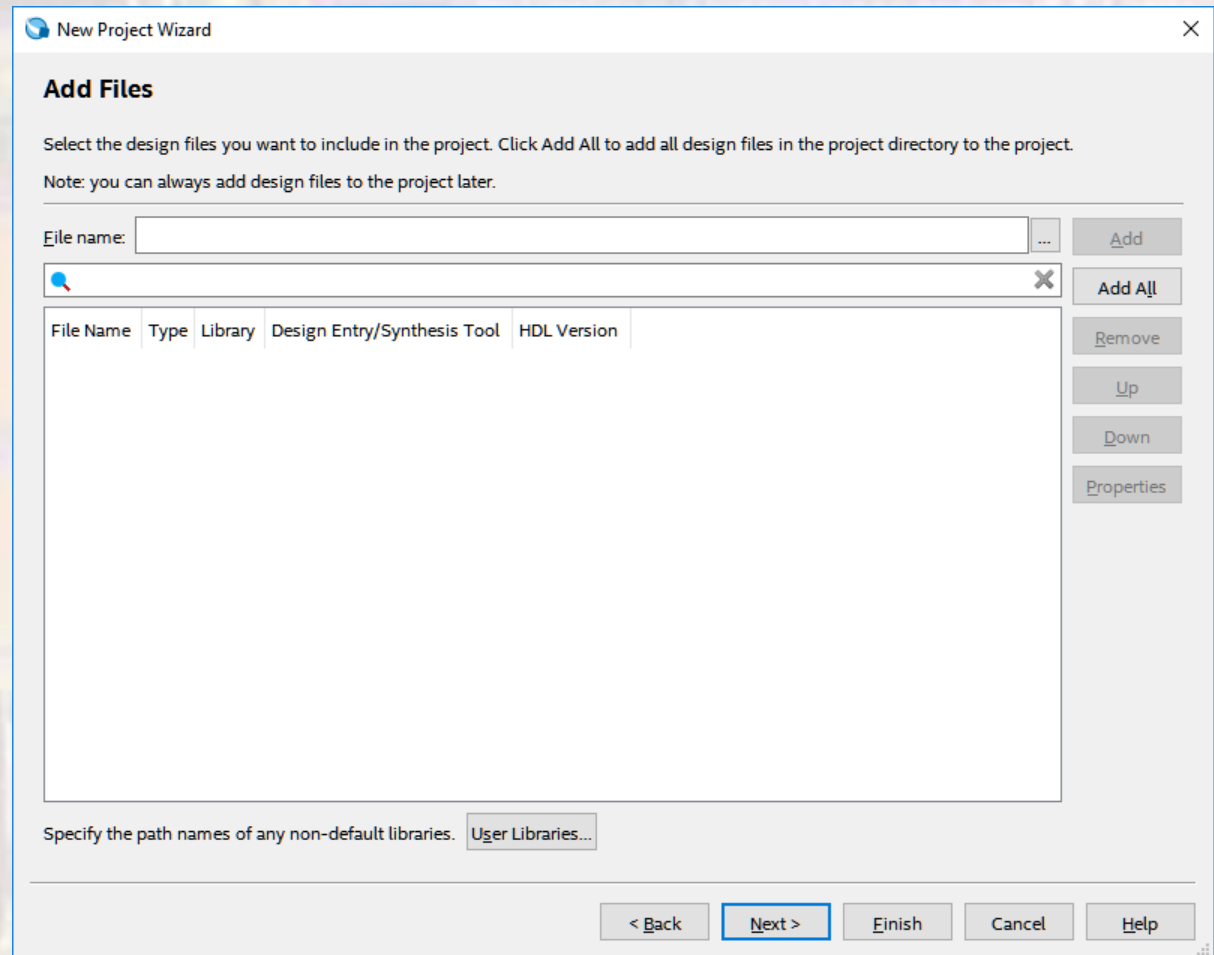
# Quartus Project Setup

- Quartus Prime – Project Setup
  - Select **Empty project**
  - Click **Next**



# Quartus Project Setup

- Quartus Prime – Project Setup
  - We will not add any files right now
  - Click **Next**





# Quartus Project Setup

- Quartus Prime – Project Setup
  - Select **Max 10 (DA/DF/DC/SA/SC)** under Family
  - Select **Max 10 DA** under Device
  - Select **10M50DAF484C7G** under Available devices
  - Click **Next**

New Project Wizard

### Family, Device & Board Settings

Device Board

Select the family and device you want to target for compilation.  
You can install additional device support with the Install Devices command on the Tools menu.

To determine the version of the Quartus Prime software in which your target device is supported, refer to the [Device Support List](#) webpage.

Device family

Family: MAX 10 (DA/DF/DC/SA/SC)

Device: MAX 10 DA

Target device

Auto device selected by the Fitter

Specific device selected in 'Available devices' list

Other: n/a

Show in 'Available devices' list

Package: Any

Pin count: Any

Core speed grade: Any

Name filter:

Show advanced devices

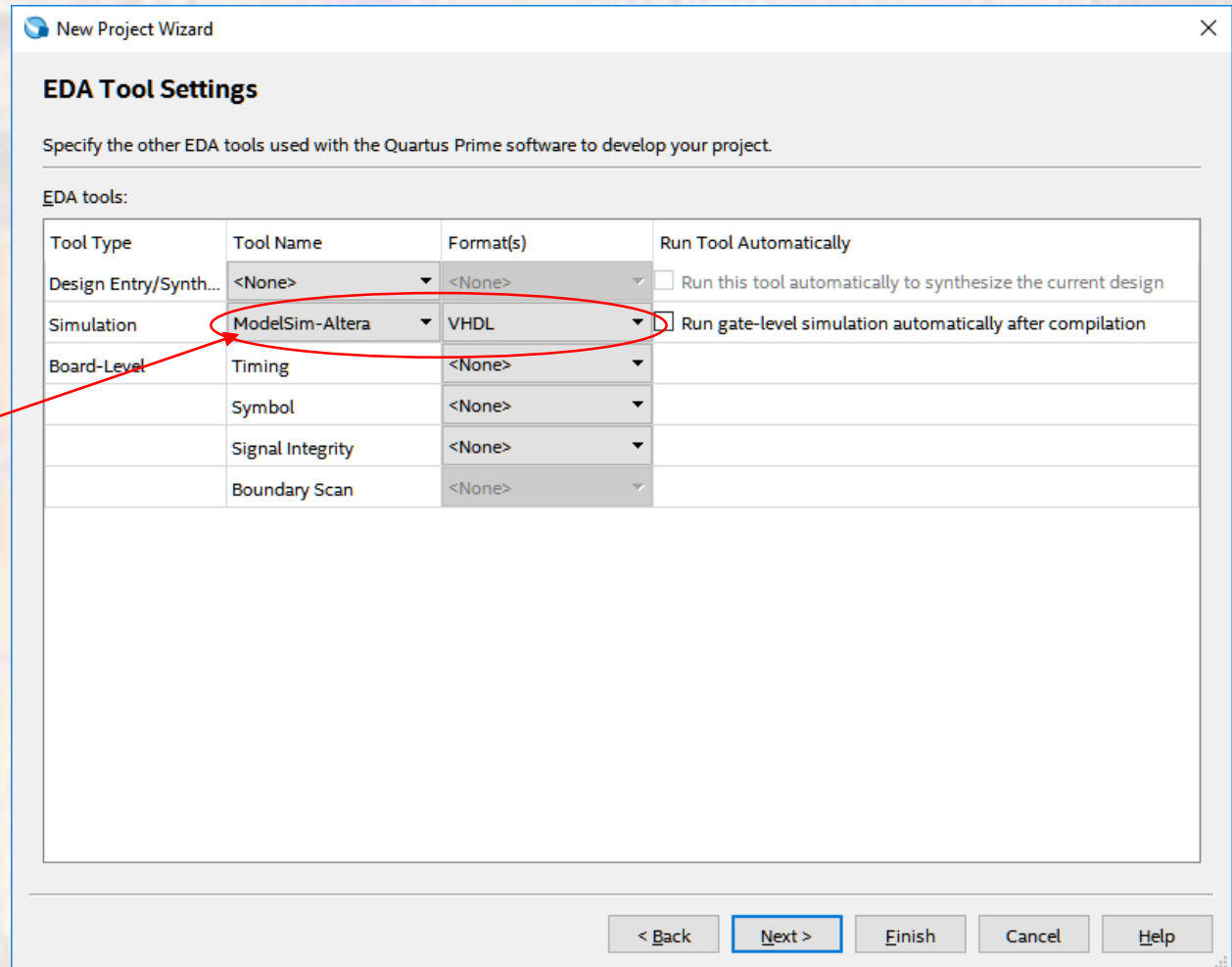
Available devices:

Name	Core Voltage	LEs	Total I/Os	GPIOs	Memory Bits	Embedded multiplier
10M50DAF484C7G	1.2V	49760	360	360	1677312	288

< Back Next > Finish Cancel Help

# Quartus Project Setup

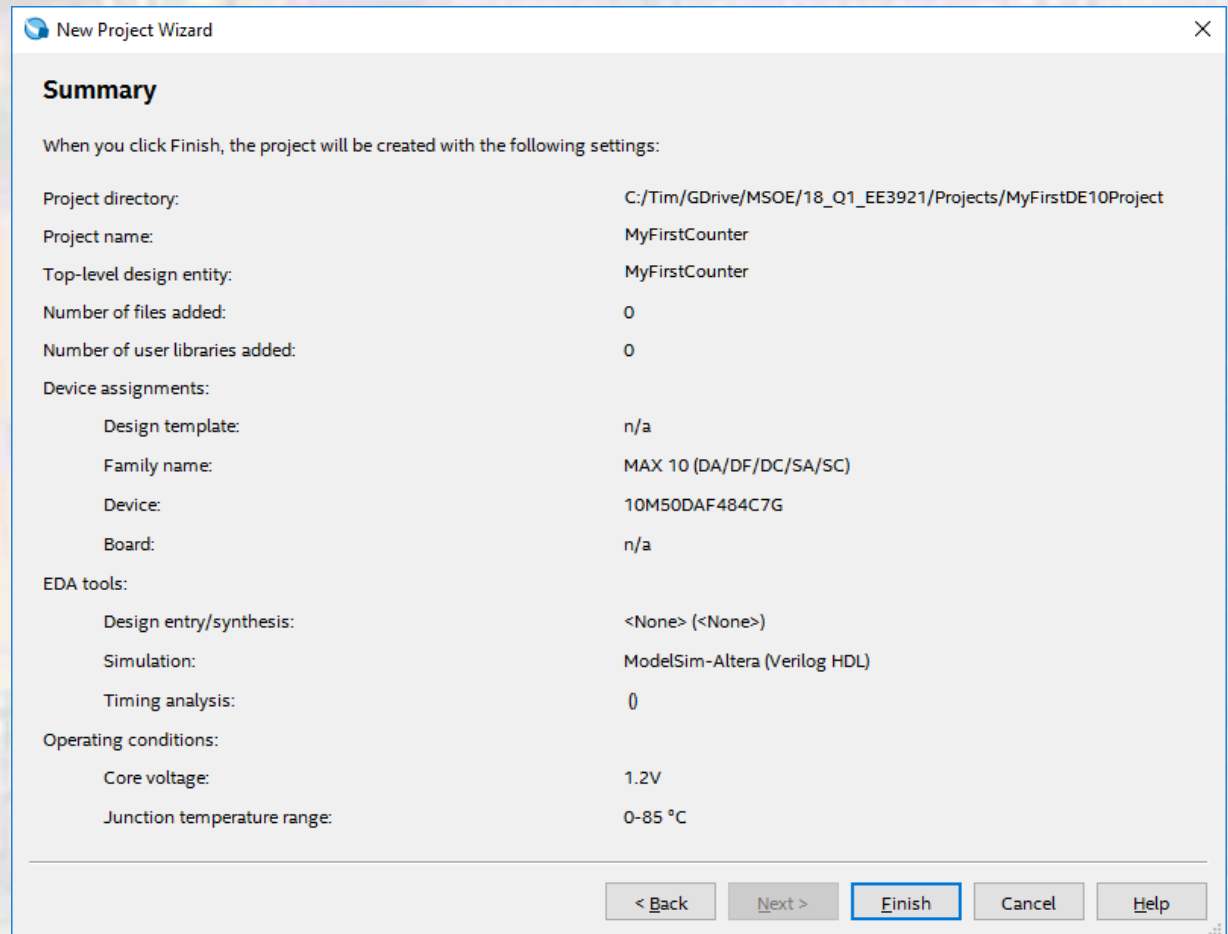
- Quartus Prime – Project Setup
  - Under simulation – select **ModelSim-Altera** and **VHDL**
  - Click **Next**



Note: ModelSim-Altera  
not ModelSim

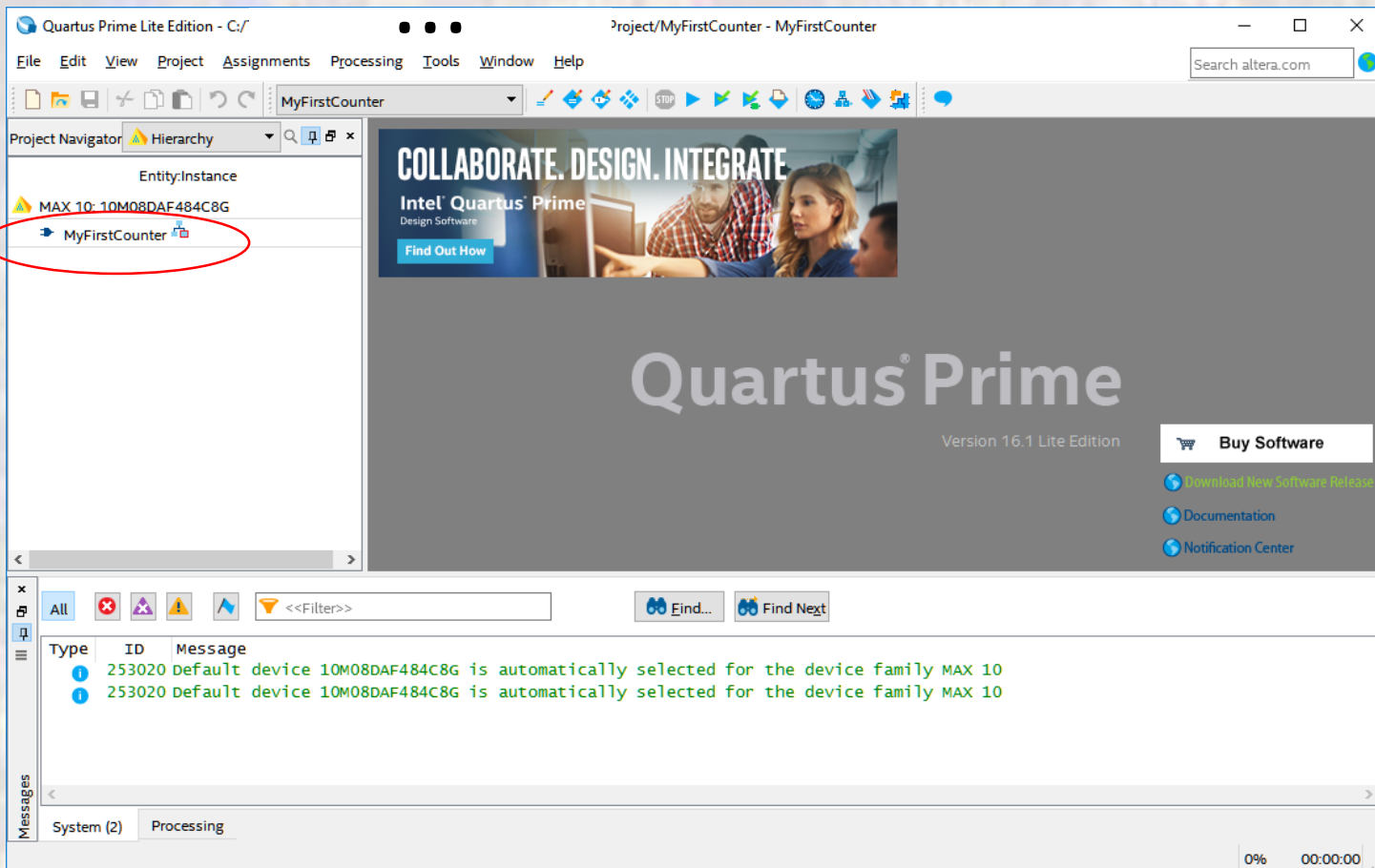
# Quartus Project Setup

- Quartus Prime – Project Setup
  - You will get a summary window
  - Click **Finish**



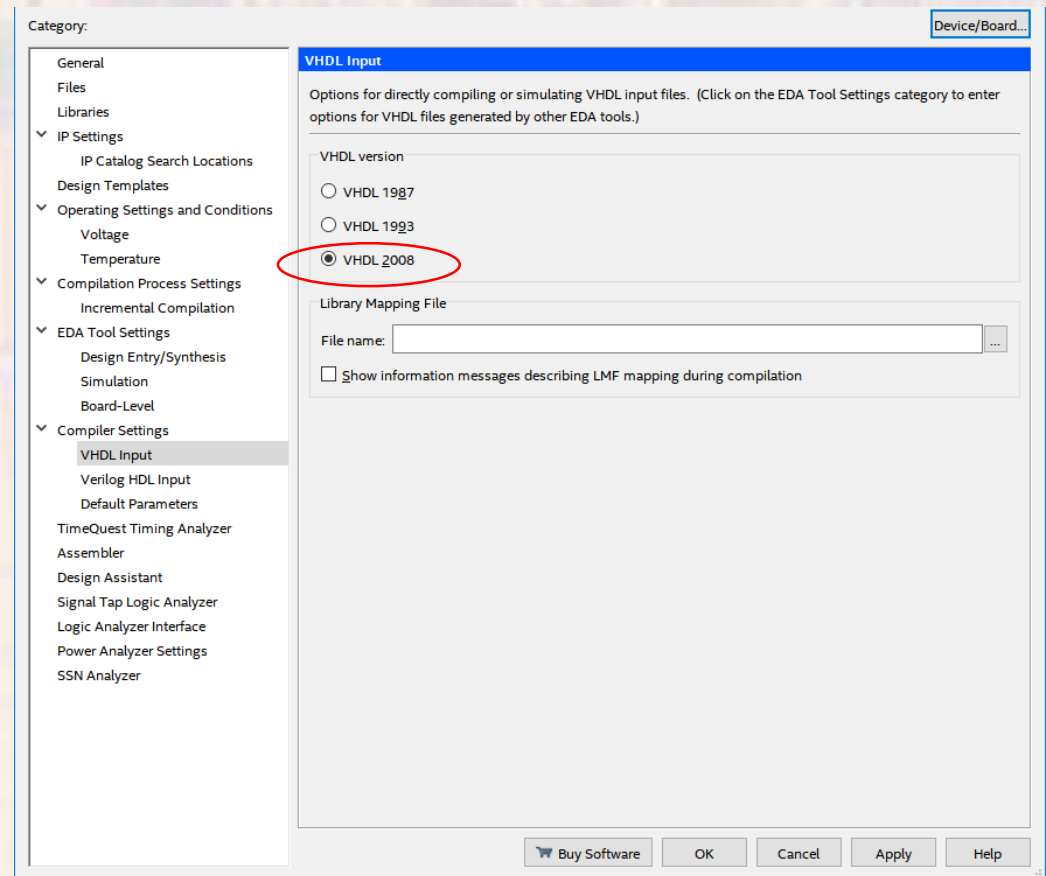
# Quartus Project Setup

- Quartus Prime – Project Setup
  - Your project will now appear in the Project Navigator window



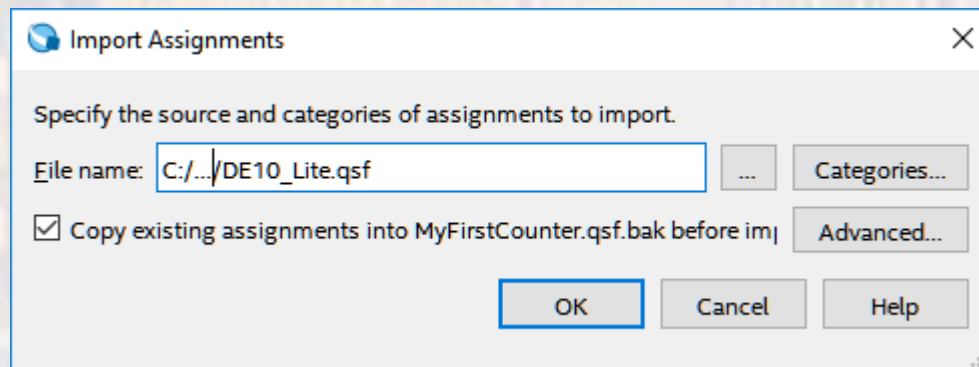
# Quartus Project Setup

- Quartus Prime – Project Setup
  - We will be using the 2008 version of VHDL
  - Assignments -> Settings -> Compiler Settings -> VHDL Input
    - Select VHDL 2008



# Quartus Project Setup

- Quartus Prime – Project Setup
  - If you plan to run the project on the DE10 and
    - you want to use the assigned pin names (**recommended**)
      - you need to import the DE10\_Lite.qsf file from the web page
      - right click the link and **save link as** (DE10\_Lite.qsf, QSF file type) in the project directory
  - **Assignments -> Import Assignments**
    - Point to your downloaded DE10\_Lite.qsf file

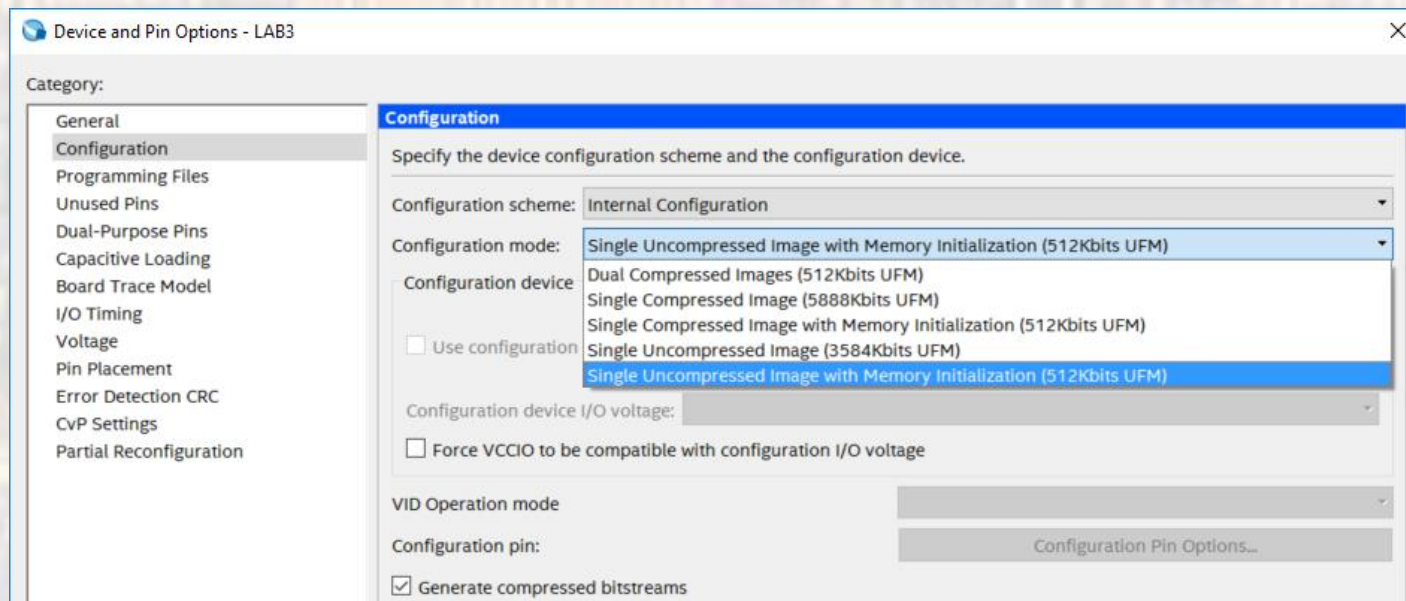


# Quartus Project Setup

- Quartus Prime – Project Setup
  - Proper placement and routing requires that the design meets a set of timing requirements
  - A very basic set of timing requirements is available in the file Basic\_SDC.sdc on the web site
  - **We will not be using the timing files at this time**

# Quartus Project Setup

- Quartus Prime – Project Setup
    - Configure the tools for the DE10\_Lite board
      - Assignments -> Device -> Device and Pin Options -> Configuration -> Configuration Mode
- and select
- single uncompressed Image with Memory Initialization





# Quartus Project Setup

- Quartus Prime – Project Setup
  - Your project is ready to use