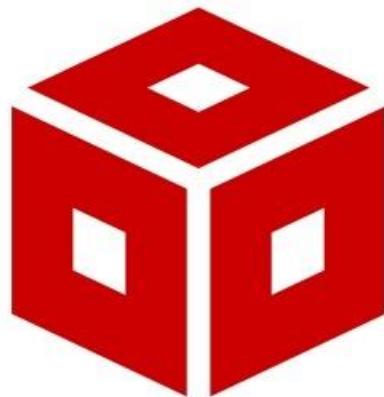



Guía de Instalación de Code Composer y TivaWare



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<http://www.ti.com/tool/LMFLASHPROGRAMMER>


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Code Composer Studio (CCS) Integrated Development Environment (IDE)

CCSTUDIO

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Description

Code Composer Studio is an integrated development environment (IDE) that supports TI's Microcontroller and Embedded Processors portfolio. Code Composer Studio comprises a suite of tools used to develop and debug embedded applications. It includes an optimizing C/C++ compiler, source code editor, project build environment, debugger, profiler, and many other features. The intuitive IDE provides a single user interface taking you through each step of the application development flow. Familiar tools and interfaces allow users to get started faster than ever before. Code Composer Studio combines the advantages of the Eclipse software framework with advanced embedded debug capabilities from TI resulting in a compelling feature-rich development environment for embedded developers.



Code Composer Studio

Features

By Platform - Find out more about the features available for a specific processor family:

- MSP Low Power MCUs
- C2000 Real-time MCUs
- SimpleLink Wireless MCUs
- TM4x MCUs
- TMS570 & RM4 Safety MCUs
- Sitara (Cortex A & ARM9) Processors
- Multicore DSP and ARM including KeyStone Processors
- F24x/C24x devices
- C3x/C4x DSPs
- Jacinto™ automotive processors (TDAx/DRAx)

Code Composer Studio supports TI's broad portfolio of embedded processors. If you do not see a link for the family you are interested in above then select the one that is closest in terms of the processor cores used.

Download

- [Download Code Composer Studio](#)
- [Cloud Tools](#) - Visit dev.ti.com to access TI Cloud Tools. Browse through the resources available for a device, run demo applications and even develop code using Code Composer Studio Cloud

Code Composer Studio Version 10 Downloads

There are two types of installers:

- [On-demand installers](#) allow you to download only the software components that you require. Formerly known as web installers.
- [Single file installers](#) will download a large compressed file (about 1GiB) so you may then uncompress it then select what you require to install. Formerly known as offline installers.

Release	Build #	Date	Download	Notes
10.0.0	10.0.00010	Mar 16, 2020	Single file (offline) installers: Windows 64-bit-only MD5 Linux MD5 - 64-bit only MacOS MD5 On-demand (web) installers: Windows 64-bit-only MD5 Linux MD5 - 64-bit only MacOS MD5 Manifest	<ul style="list-style-type: none">• New/Notable In This Release (10.0.0.00010):• Release notes• Windows support: Code Composer Studio is now supported only on 64bit Windows machines.• Mac OS installers are distributed as signed and notarized disk image (DMG) files.• Bugfixes for IDE, DVT, Debugger• Energia 21 support• CCS User's Guide• MCU Compilers LTS 20.02.0• C6000 Compiler 8.3.6• MSP GCC v8.3.1.25• SysConfig Core v1.4.0.1234• XDCTools 3.61.0.16• Device support updates<ul style="list-style-type: none">◦ Automotive v1.1.8◦ C2000 v6.1.0.0◦ mmWave v1.6.6◦ Sitara v1.5.1◦ Shared support v1.1.6• TI EMU20_M02 v9.1.0.00001

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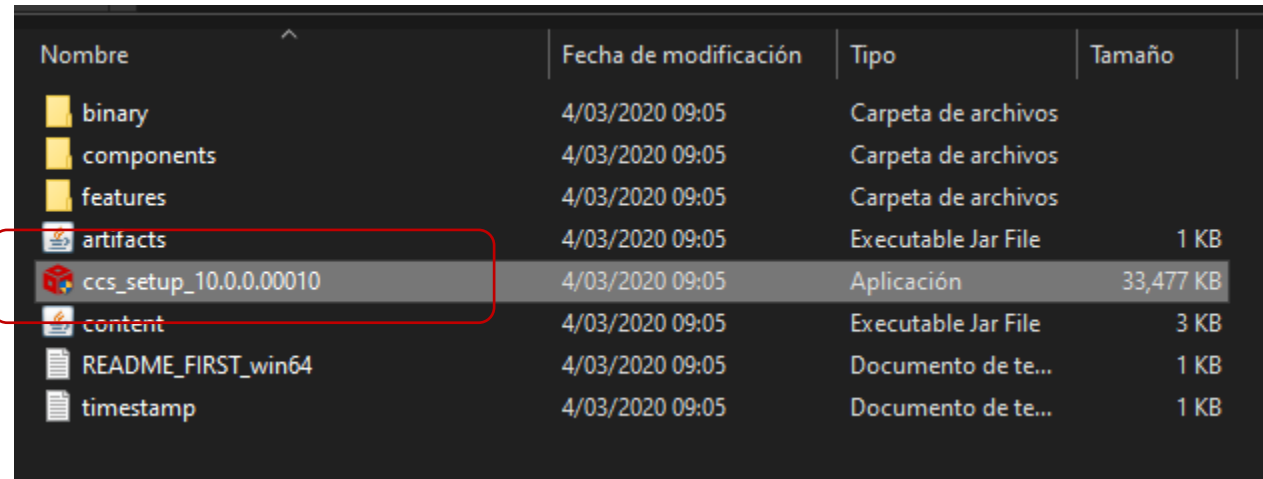
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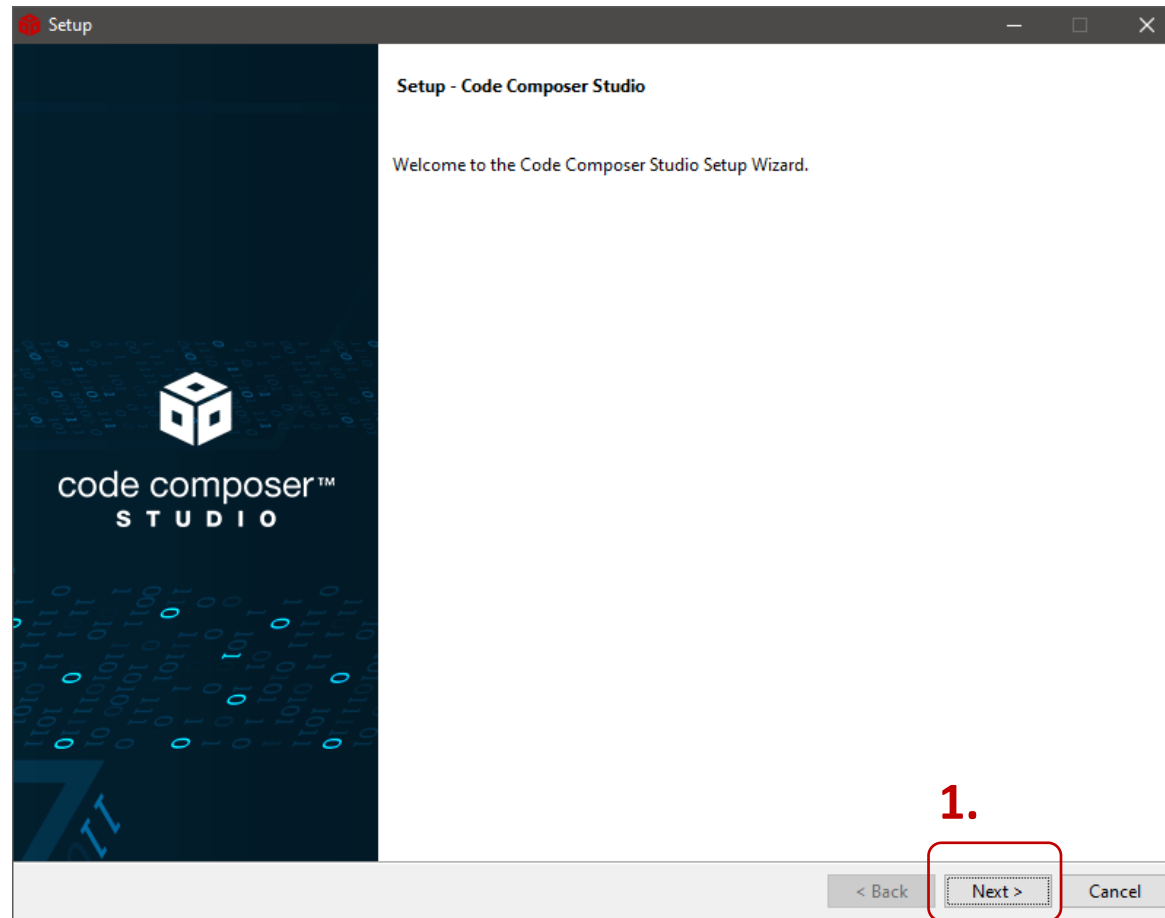
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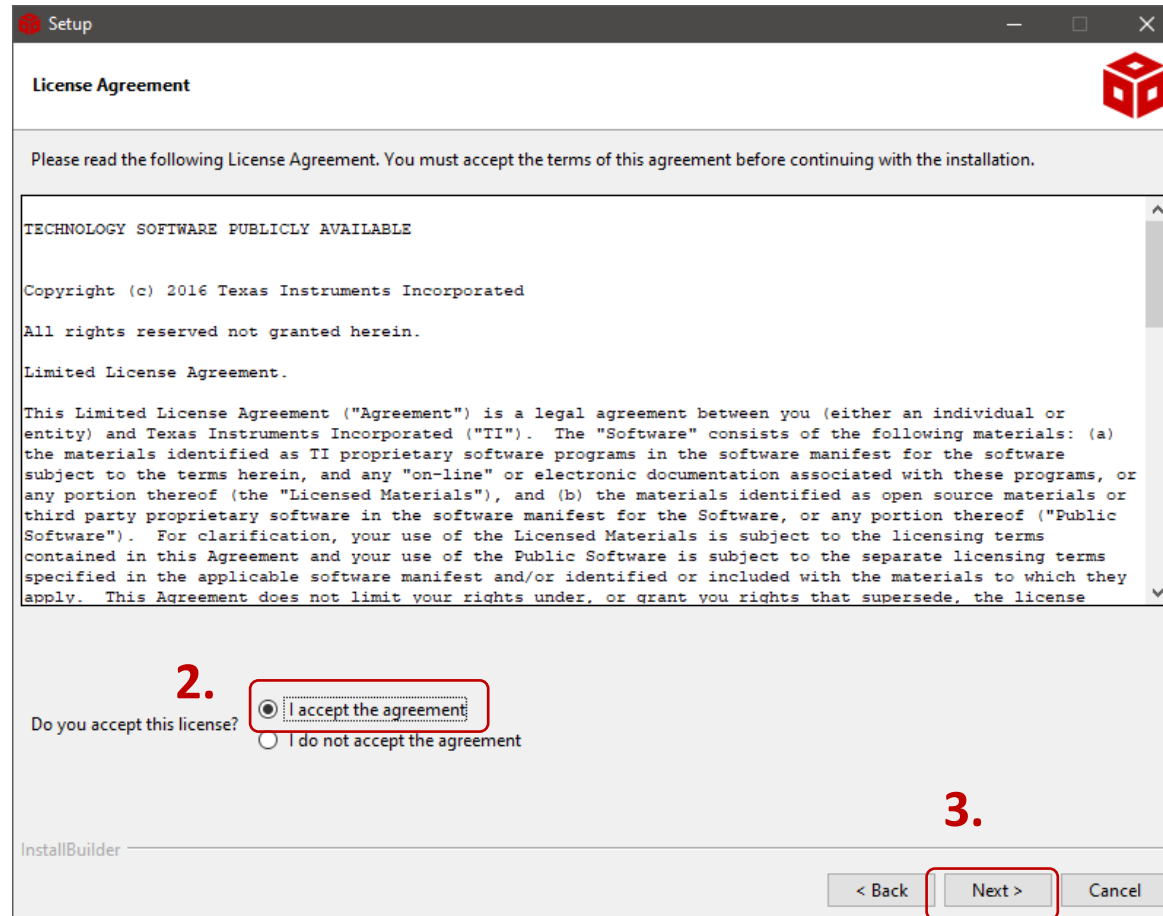
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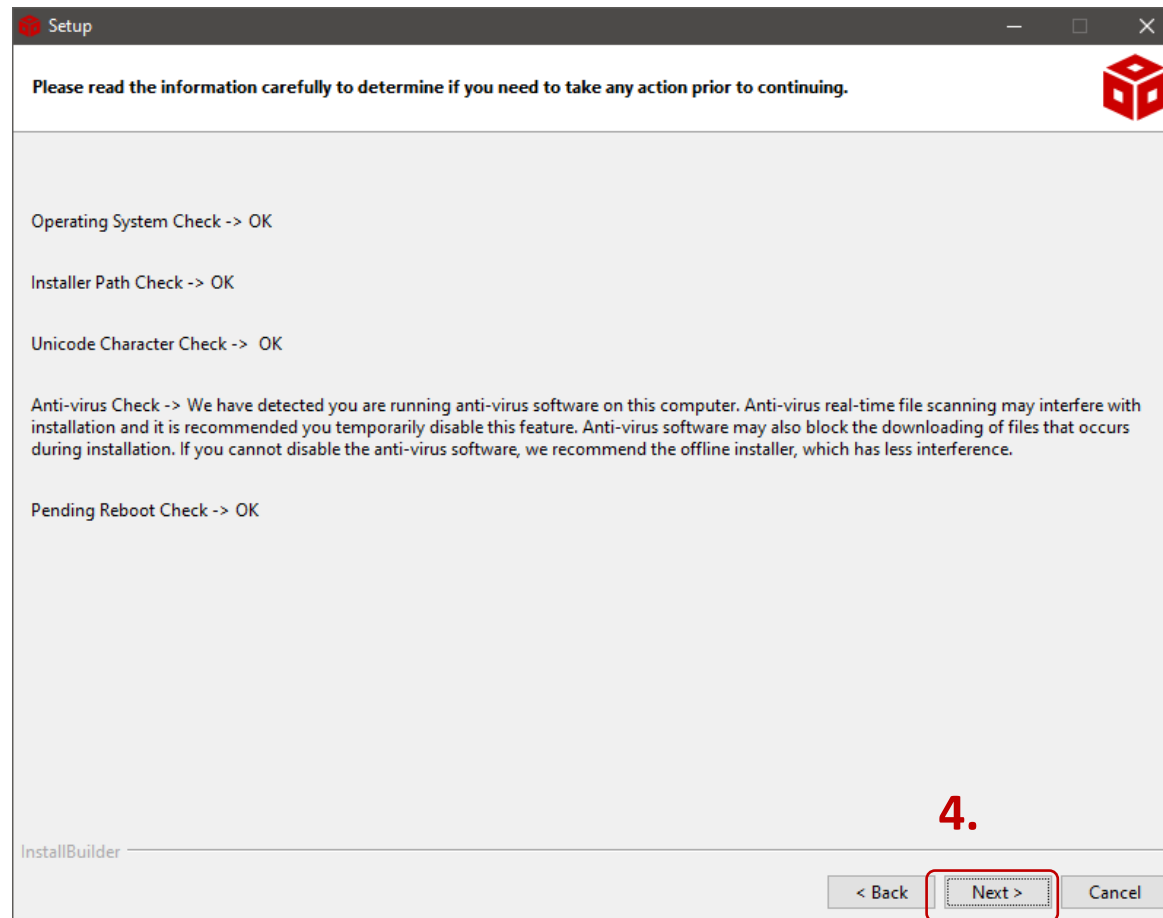
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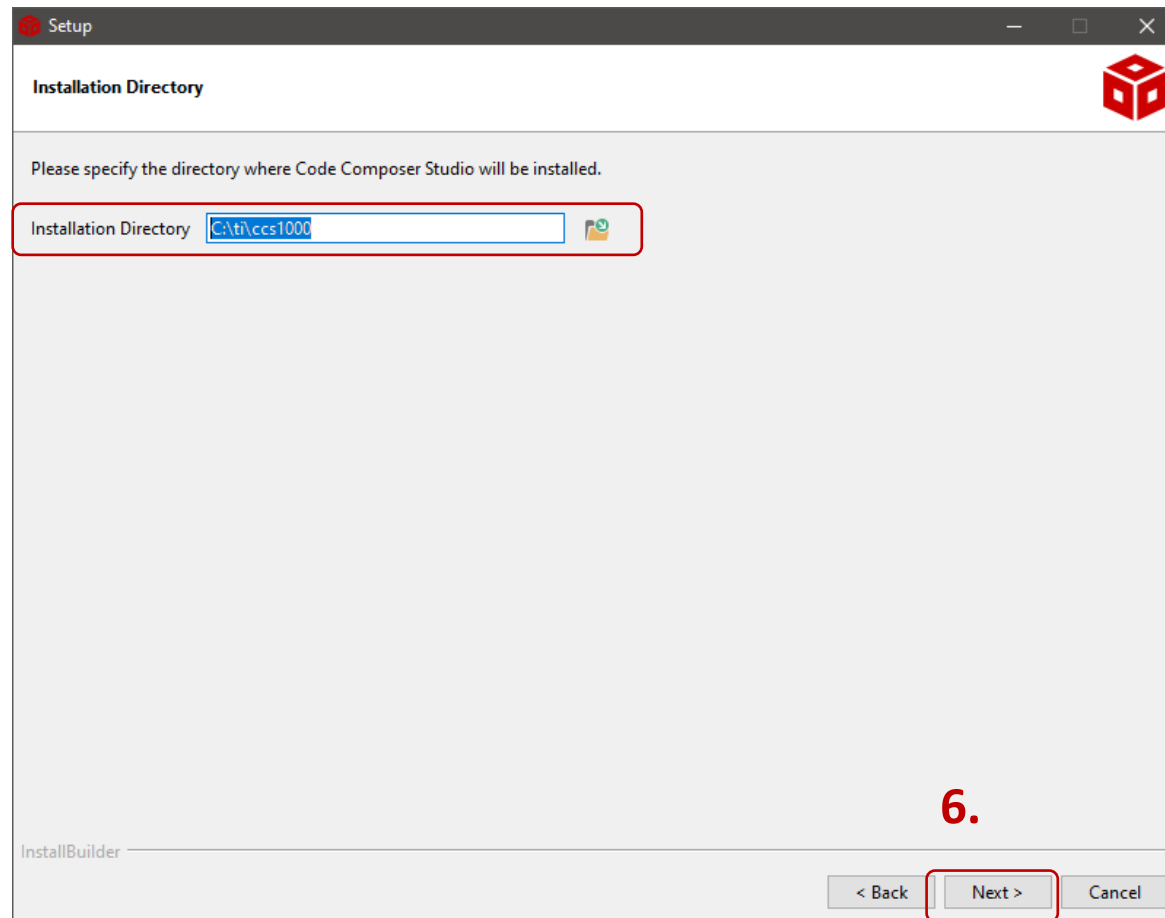
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components	4/03/2020 09:05	Carpeta de archivos	
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artifacts	4/03/2020 09:05	Executable Jar File	1 KB
ccs_setup_10.0.0.00010	4/03/2020 09:05	Aplicación	33,477 KB
content	4/03/2020 09:05	Executable Jar File	3 KB
README_FIRST_win64	4/03/2020 09:05	Documento de te...	1 KB
timestamp	4/03/2020 09:05	Documento de te...	1 KB



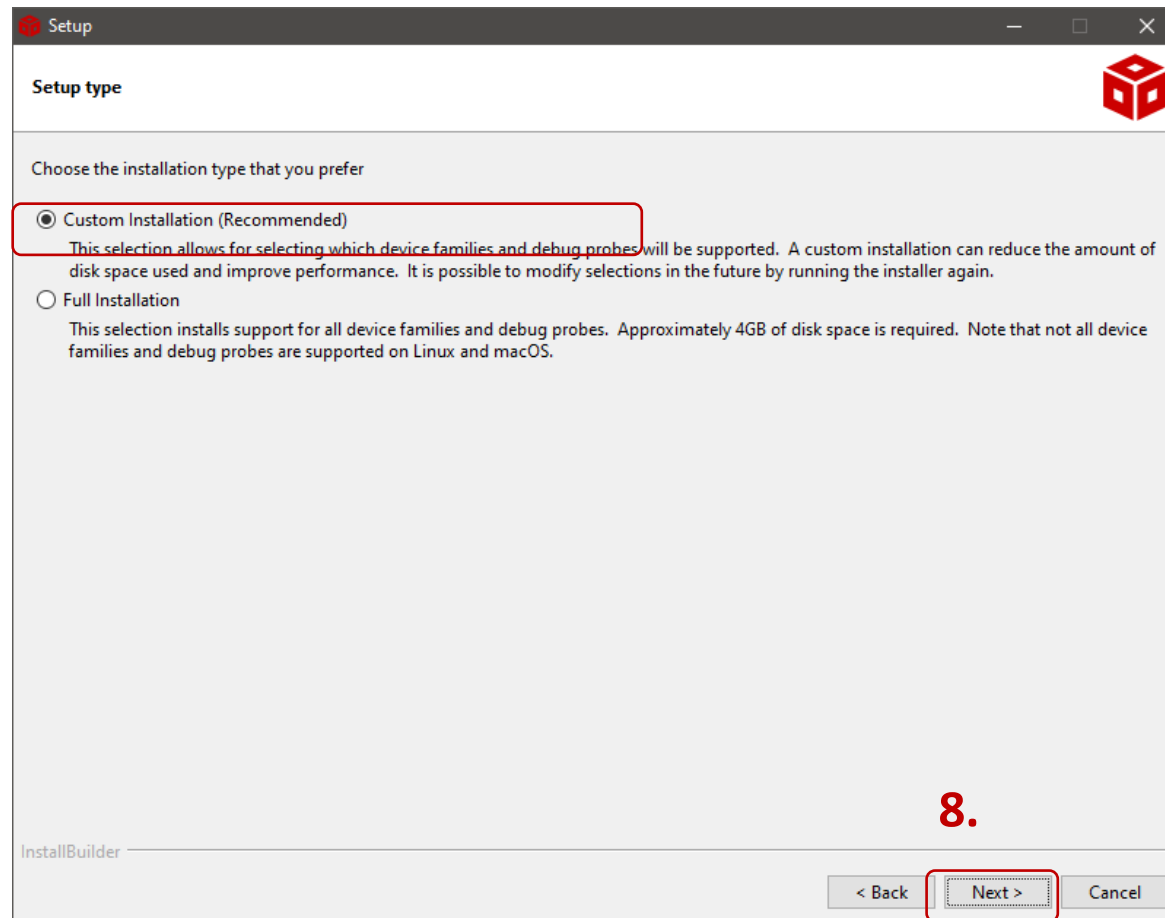




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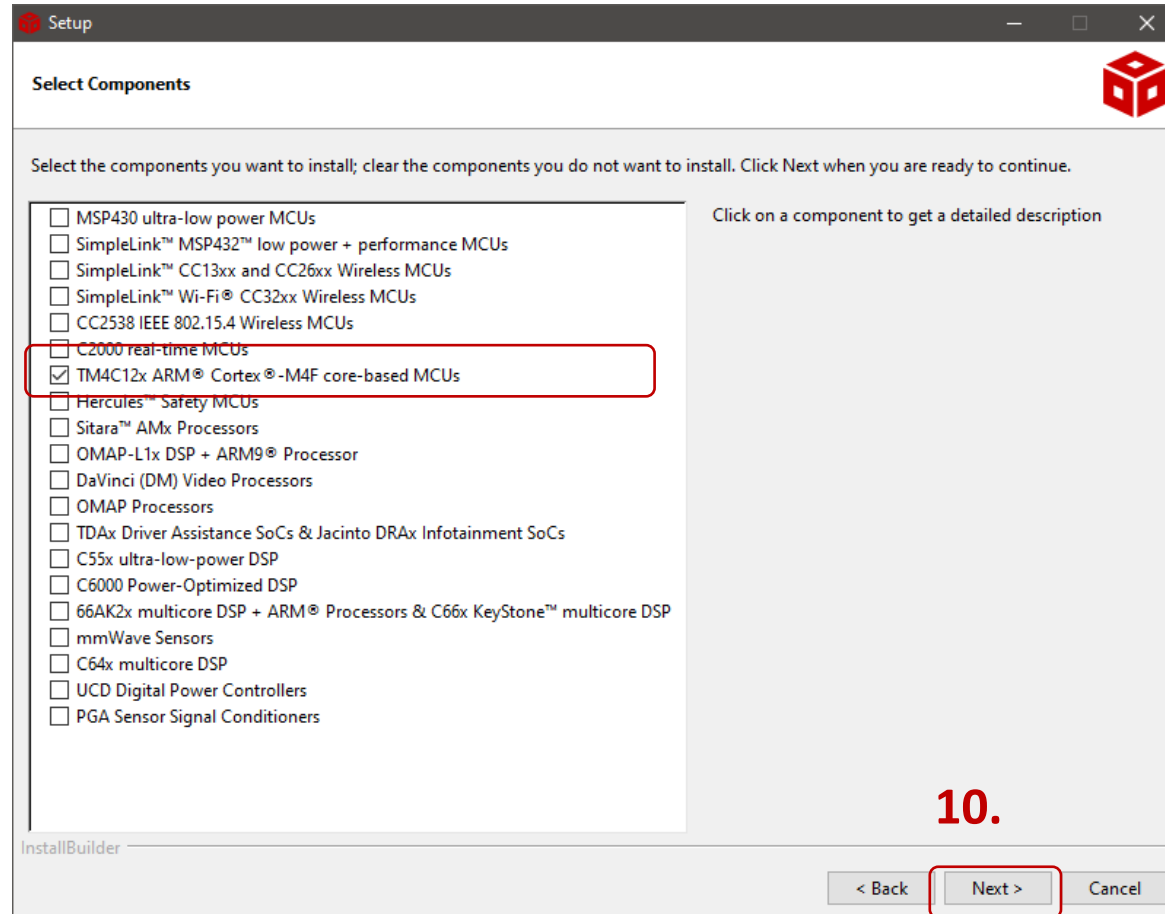


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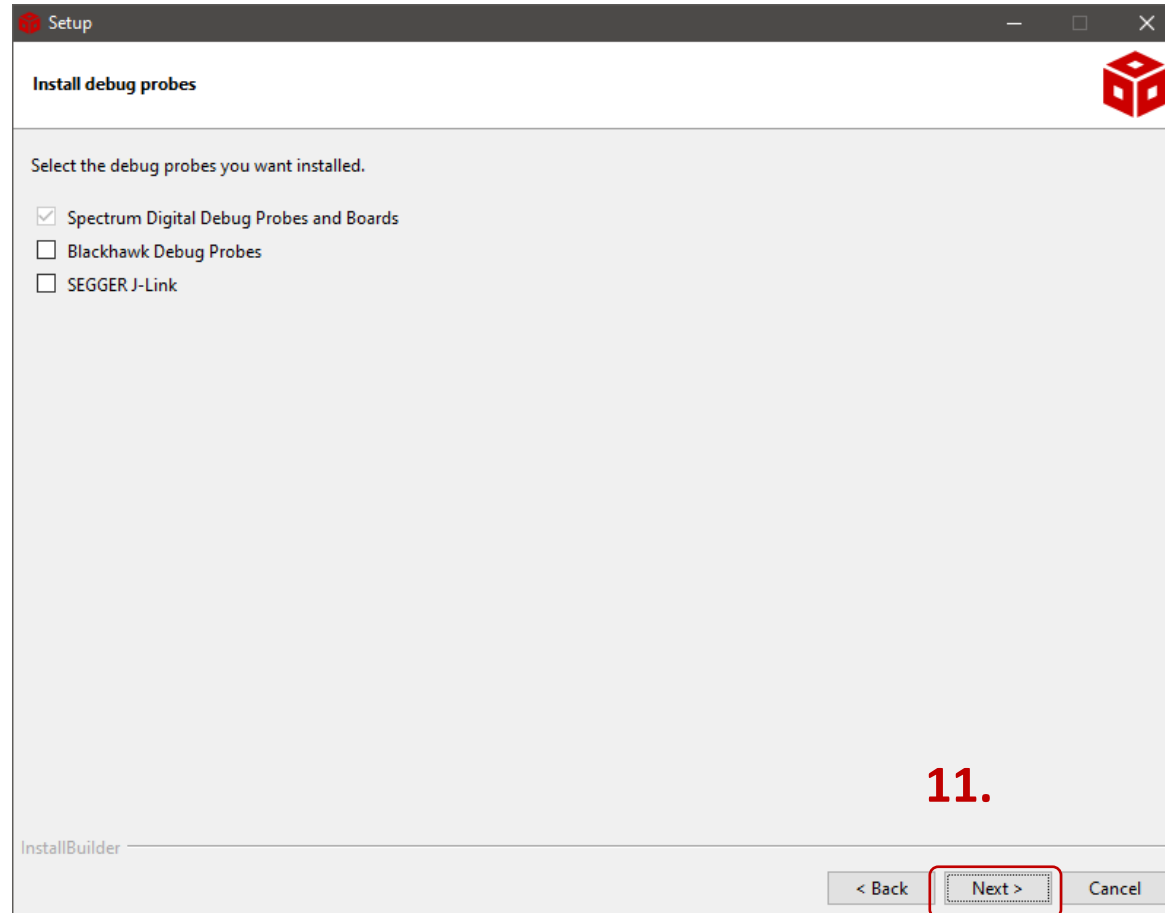


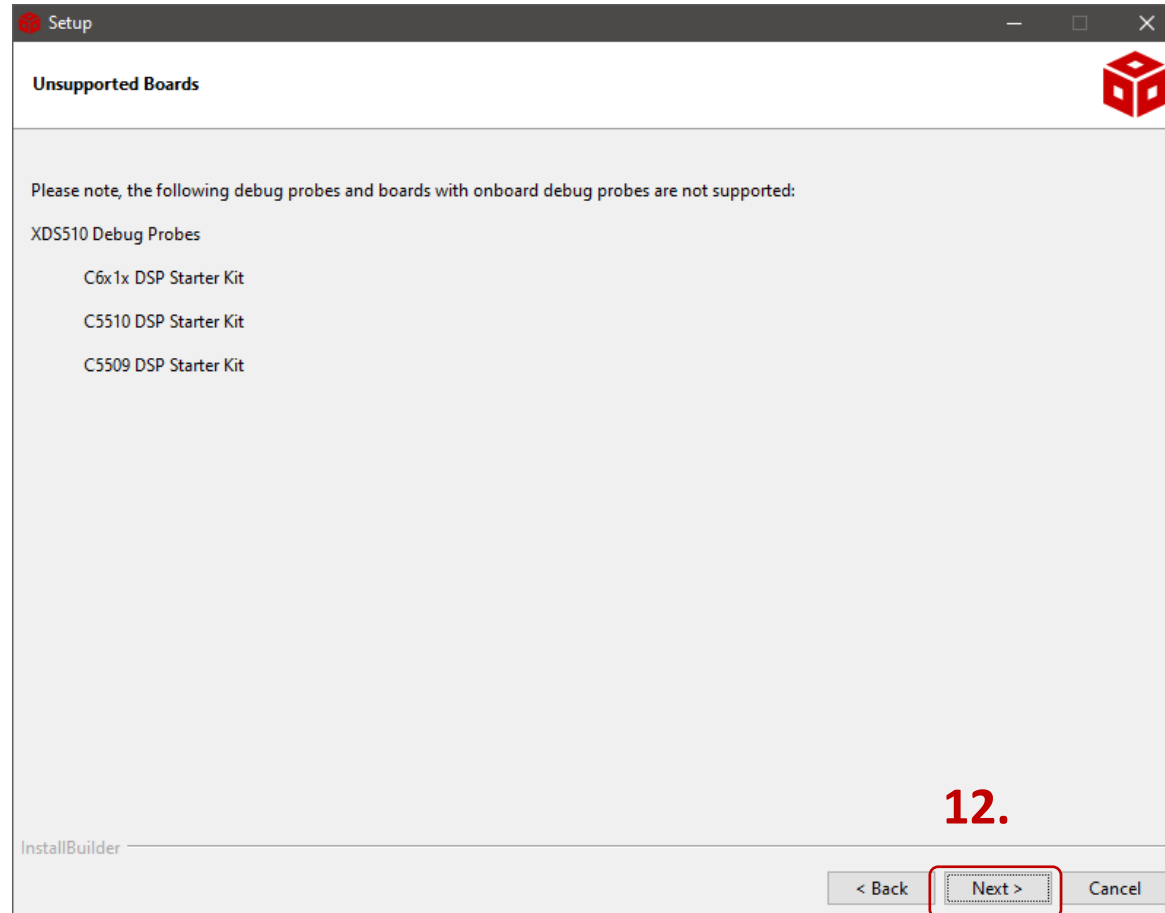
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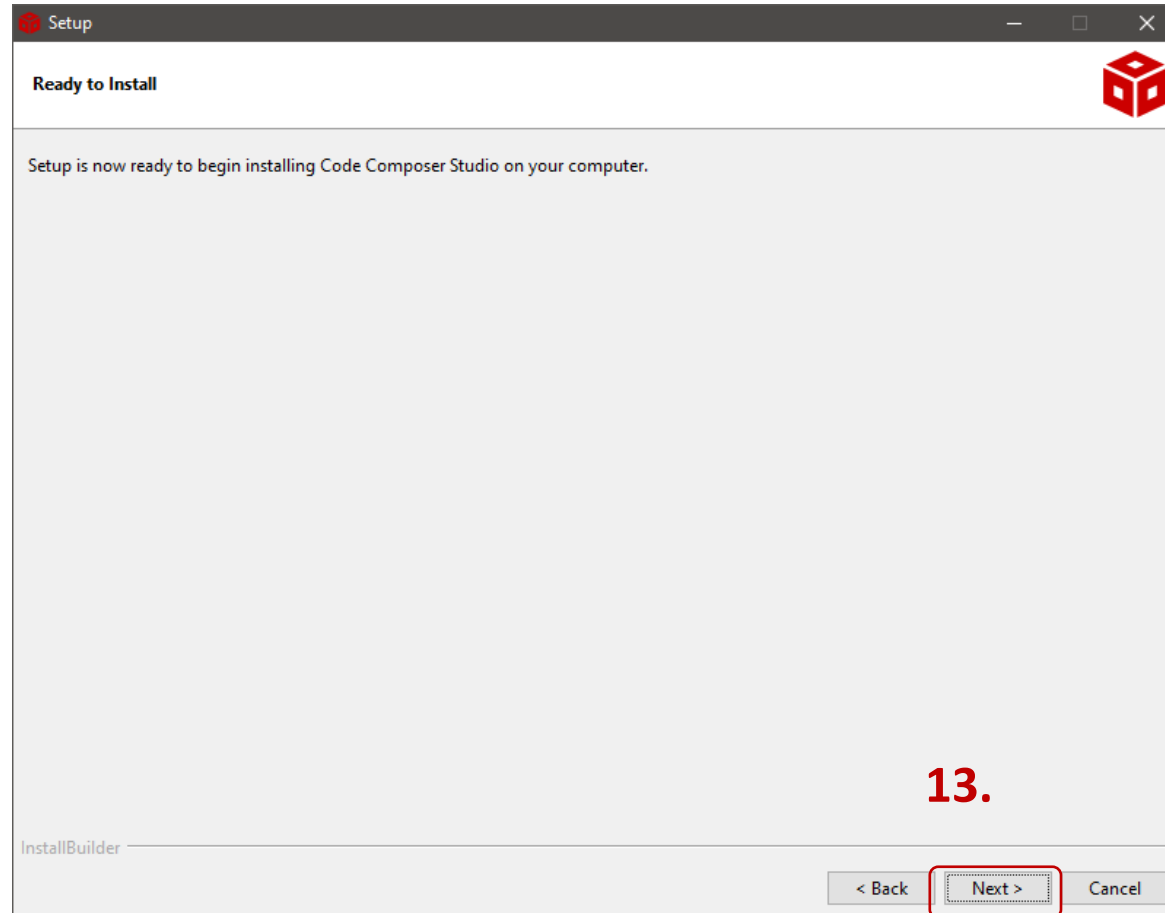
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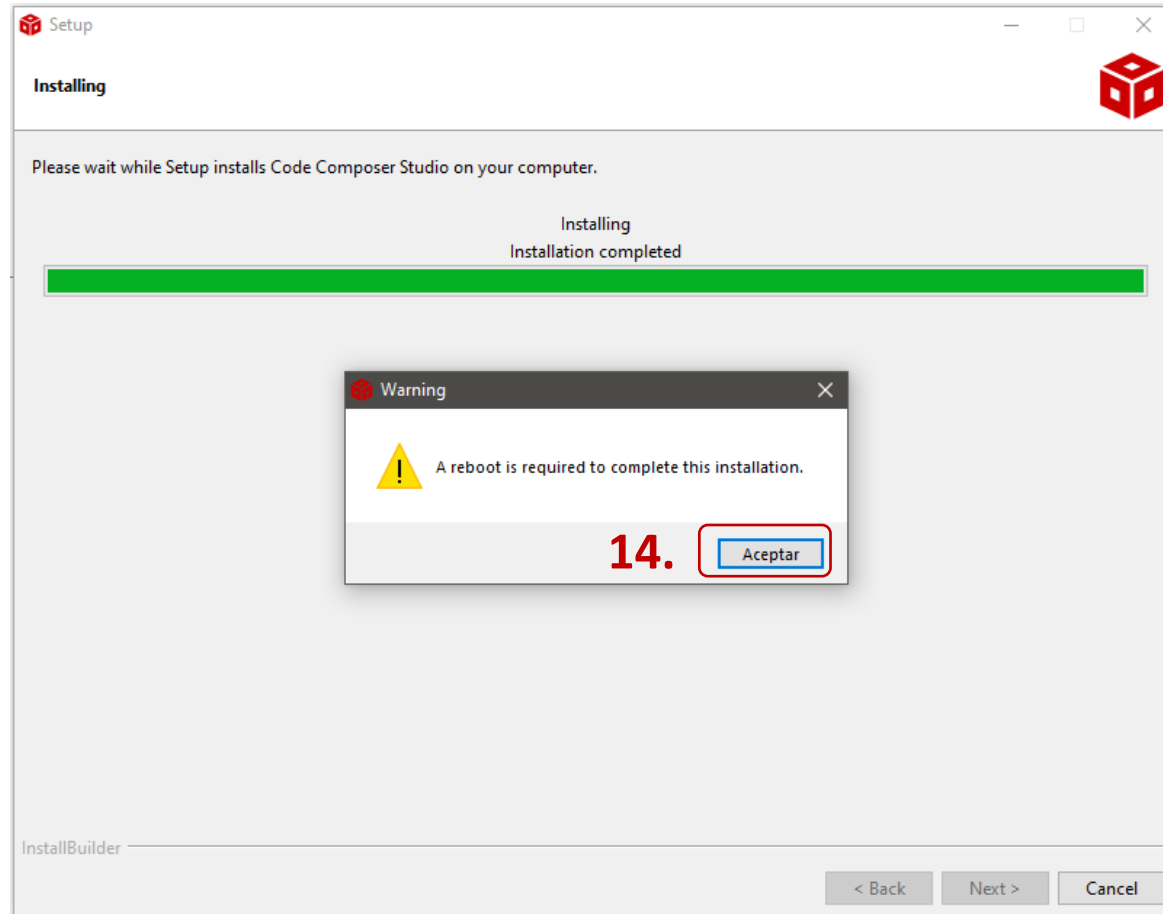


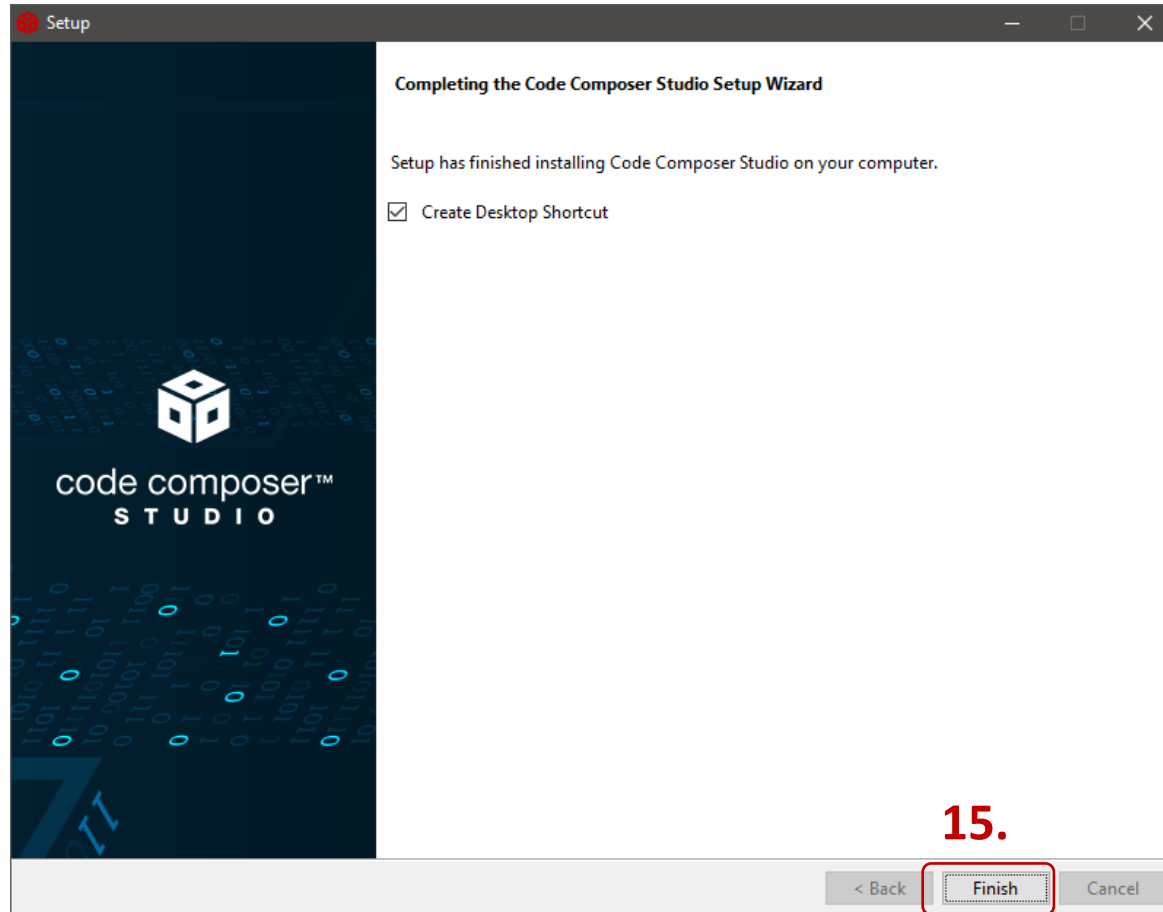
10.












Instalación de TivaWare



Ingrese al siguiente enlace:
http://software-dl.ti.com/tiva-c/SW-TM4C/latest/index_FDS.html





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Release Information

Version: 2.1.4.178
Build date: 2017-02-22

Legend

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SW-TM4C Product Downloads		
Title	Description	Size
Full Release		
SW-TM4C-RLN-2.1.4.178.pdf	TivaWare for C Series Release Notes	390K
 SW-TM4C-2.1.4.178.exe	TivaWare for TM4C Series	171096K
SW-TM4C-2.1.4.178.PATCH-1.0.zip	Patch for TivaWare for TM4C Series	17876K
Kit Software		
 SW-EK-LM4F232-2.1.4.178.exe	EK-LM4F232 Kit Software	58456K
 SW-EK-TM4C123GXL-2.1.4.178.exe	EK-TM4C123GXL Kit Software	30324K
 SW-DK-TM4C123G-2.1.4.178.exe	DK-TM4C123GL Kit Software	60252K
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Libraries		
 SW-TM4C-DRL-2.1.4.178.exe	TivaWare for C Series Peripheral Driver Library	9724K
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 SW-TM4C-GRL-2.1.4.178.exe	TivaWare for C Series Graphics Library	7644K
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 SW-TM4C-SENSORLIB-2.1.4.178.exe	TivaWare for C Series Sensor Library	1728K
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 SW-TM4C-USBL-2.1.4.178.exe	TivaWare for C Series USB Library	3780K
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Related Documentation and Utilities		
 SW-TM4C-BOOTLDR-UG-2.1.4.178.pdf	TivaWare for C Series Boot Loader User Guide	324K
 SW-USB-win-2.1.4.178.msi	TivaWare for C Series 32-bit Windows Examples	2028K

For more information:

Visit the TM4C Series forums on TI E2E.

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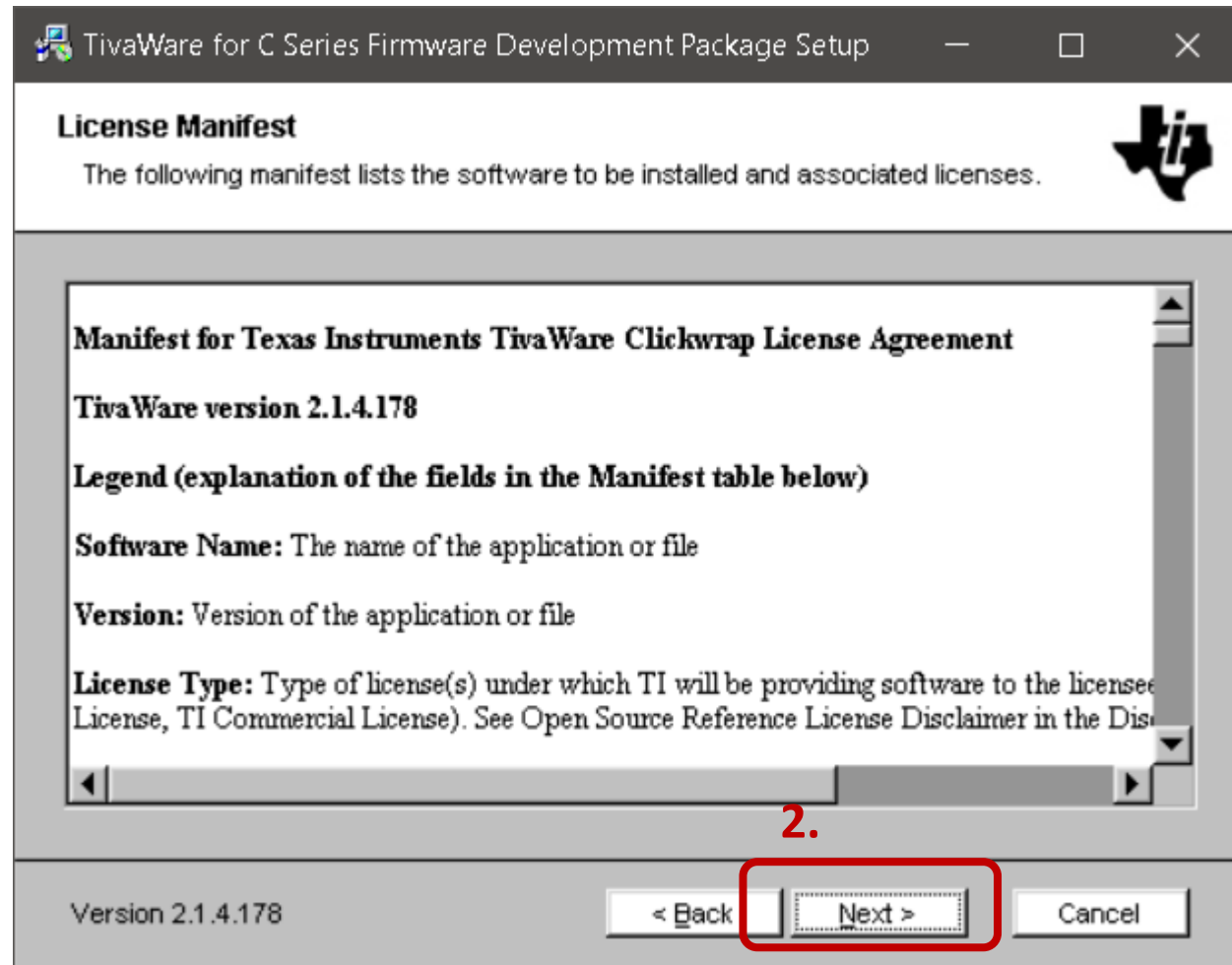
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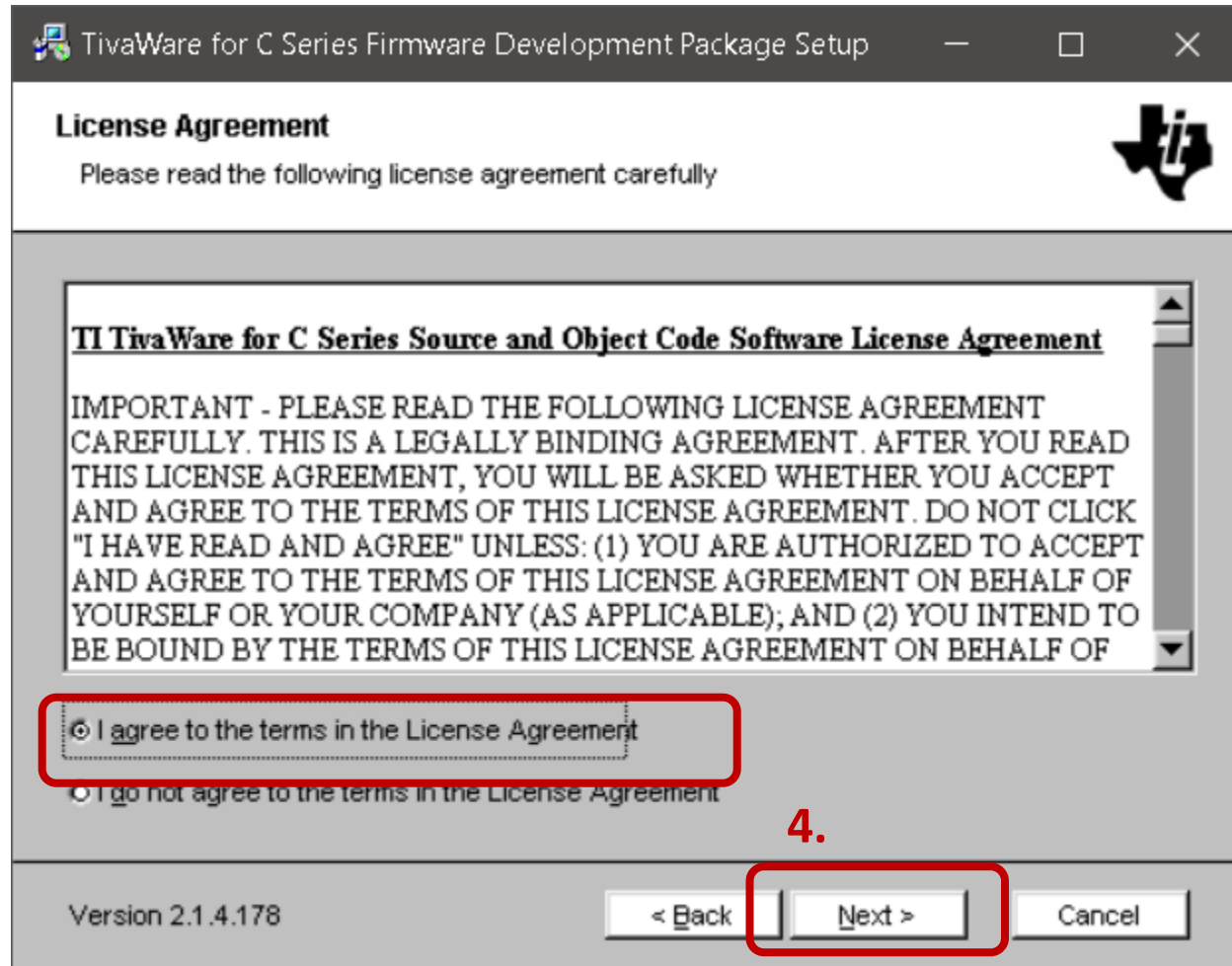
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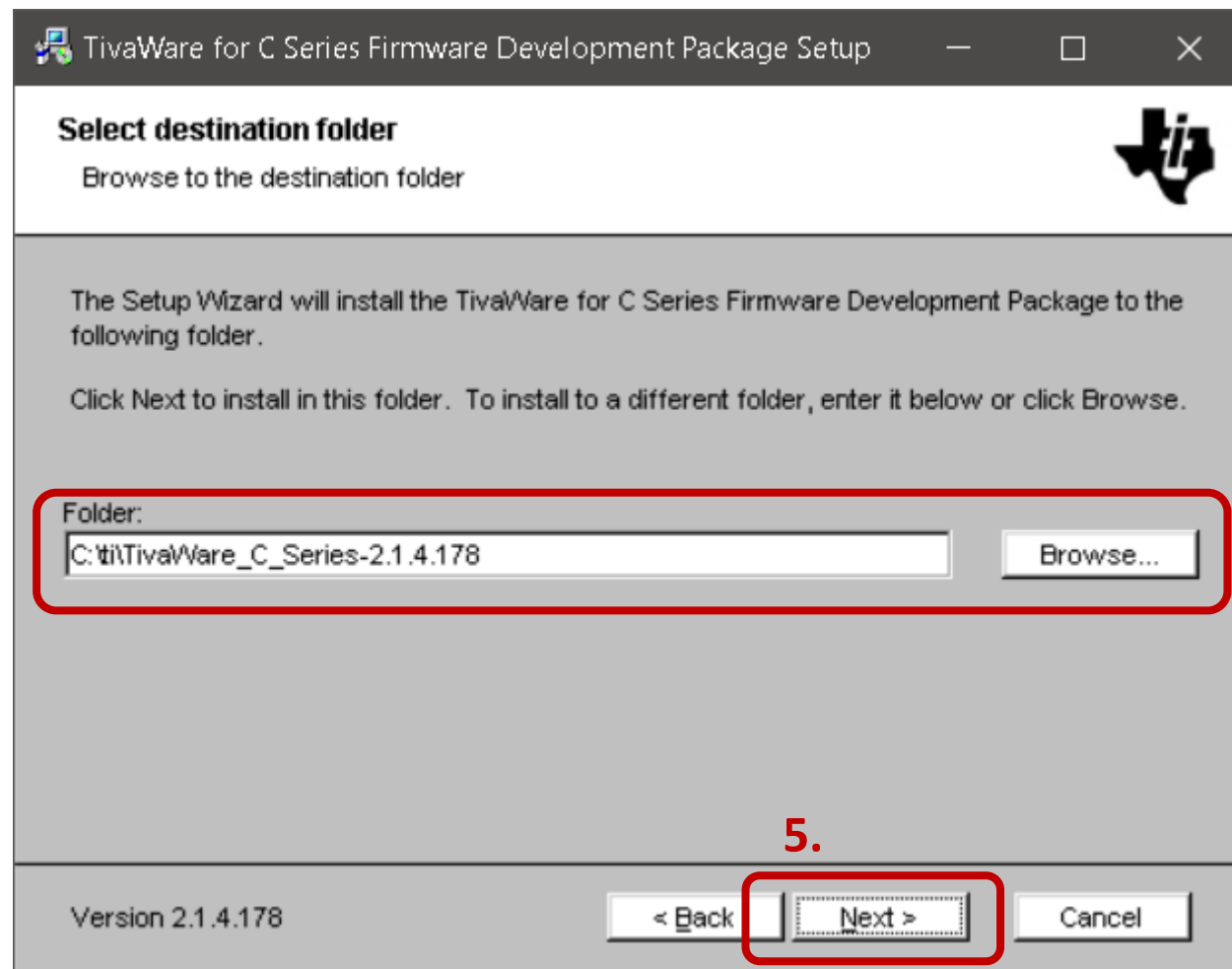
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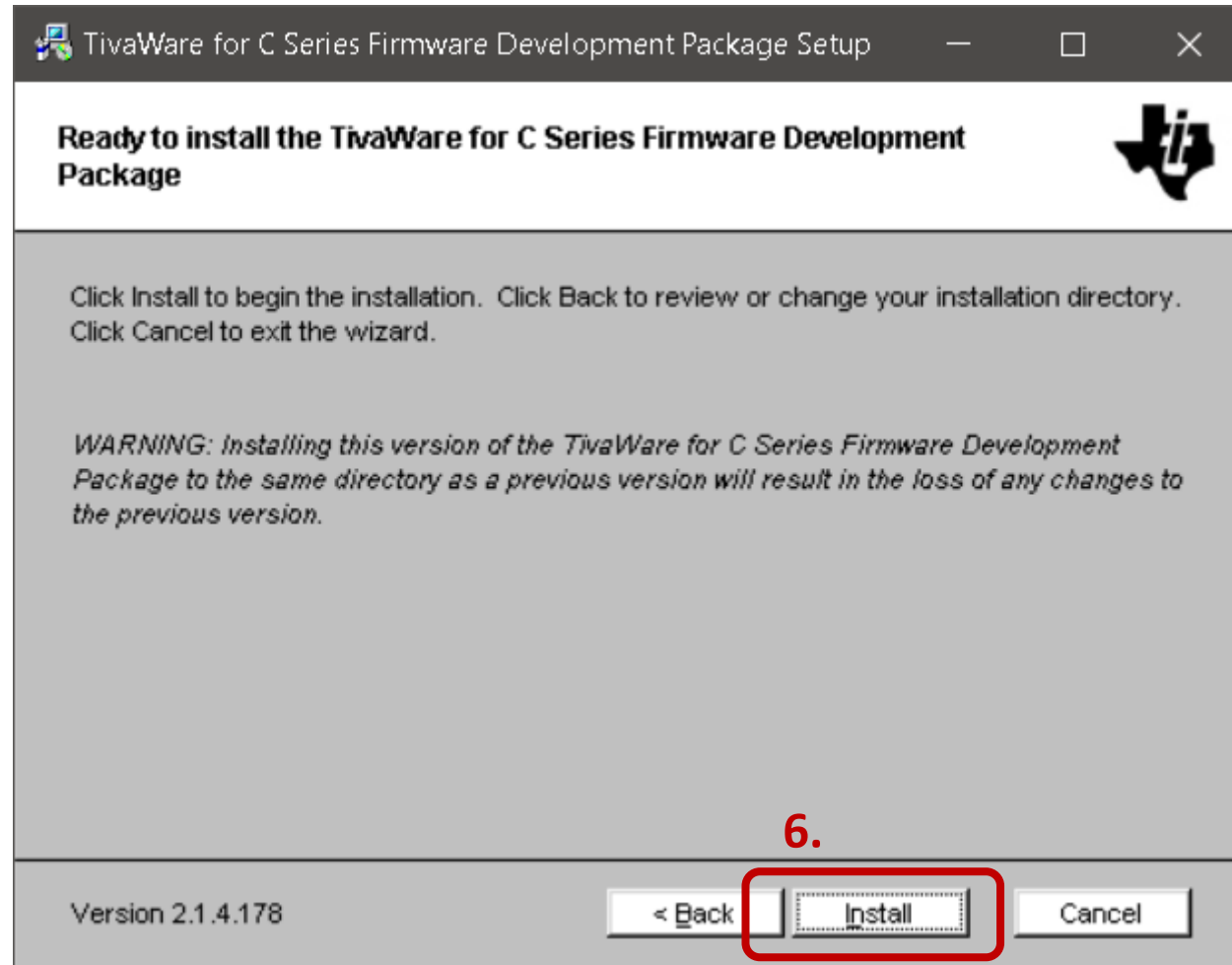




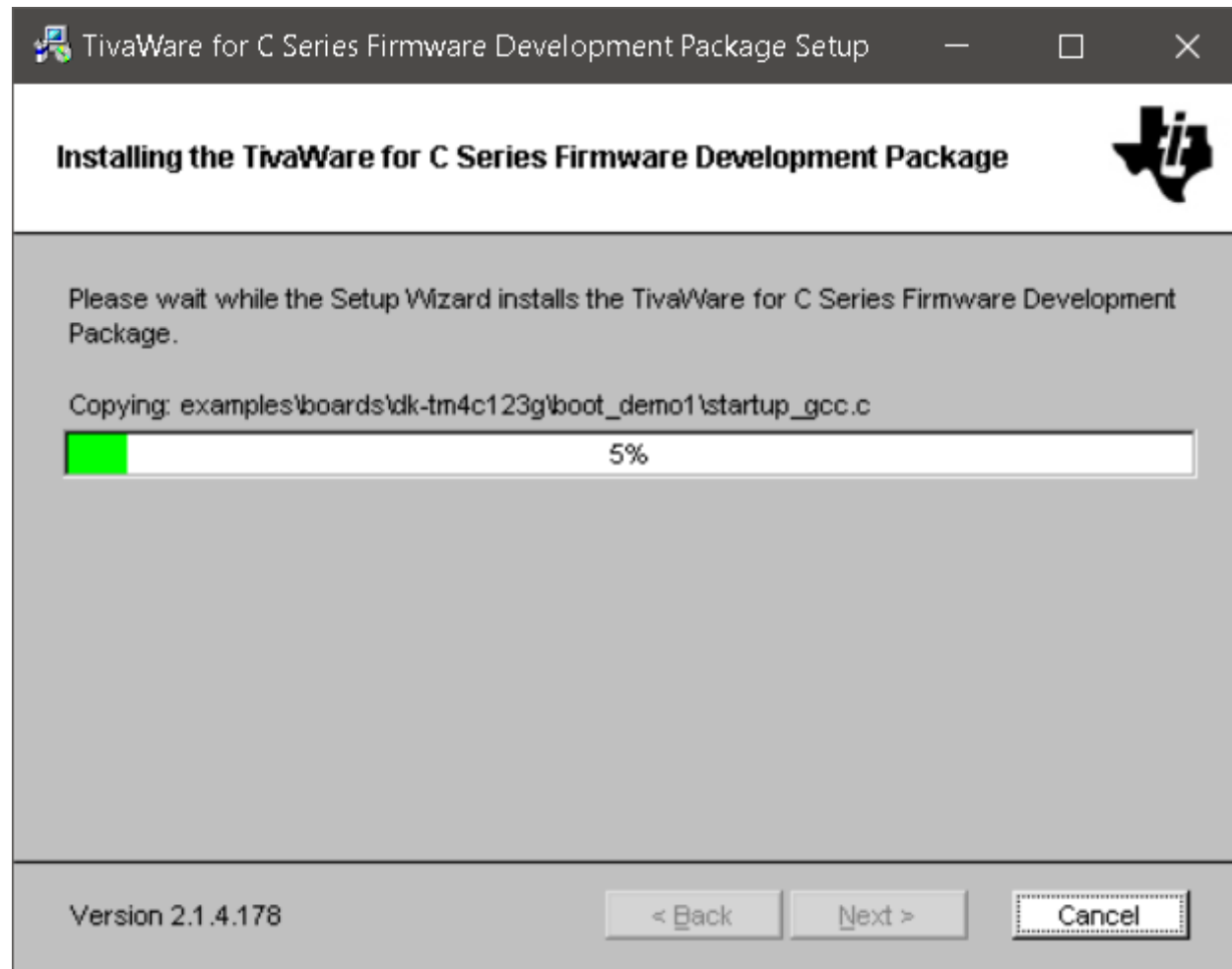


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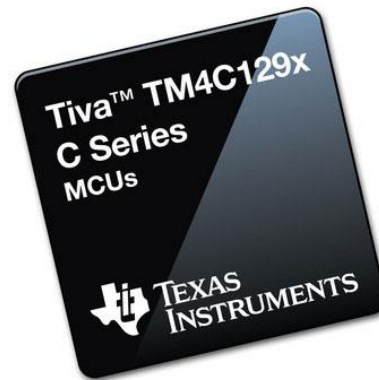
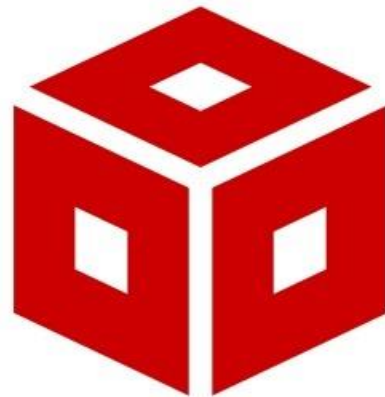
Esperar a que termine la instalación



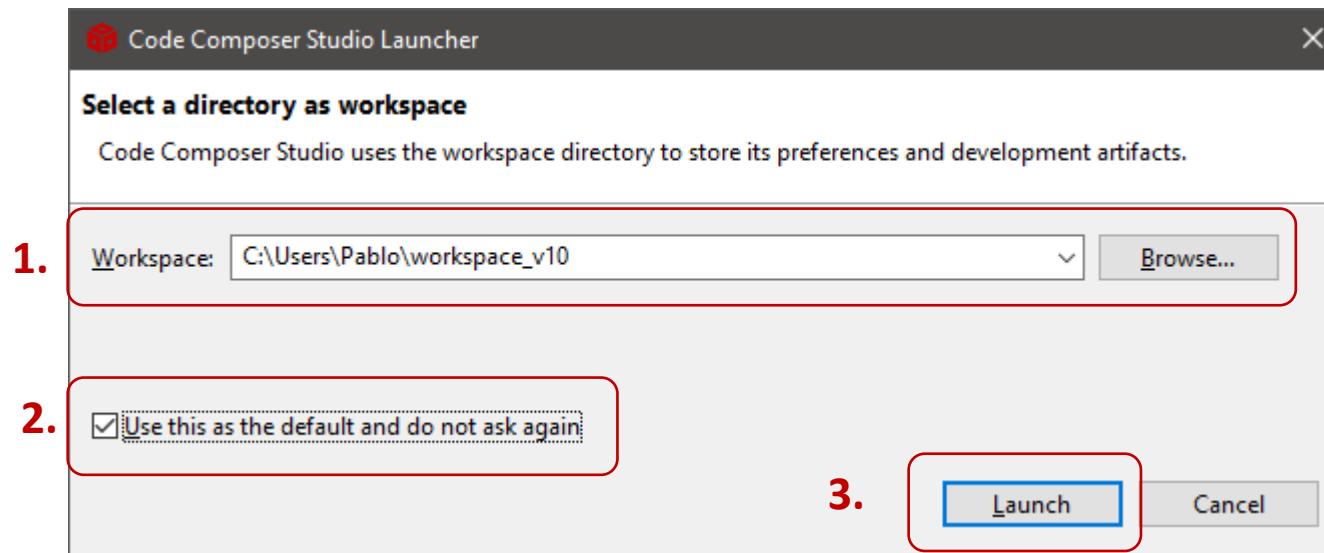


**Por default la ubicación de las librerías de TivaWare se encuentran en el siguiente directorio
C:\ti\TivaWare_C_Series-2.1.4.178**

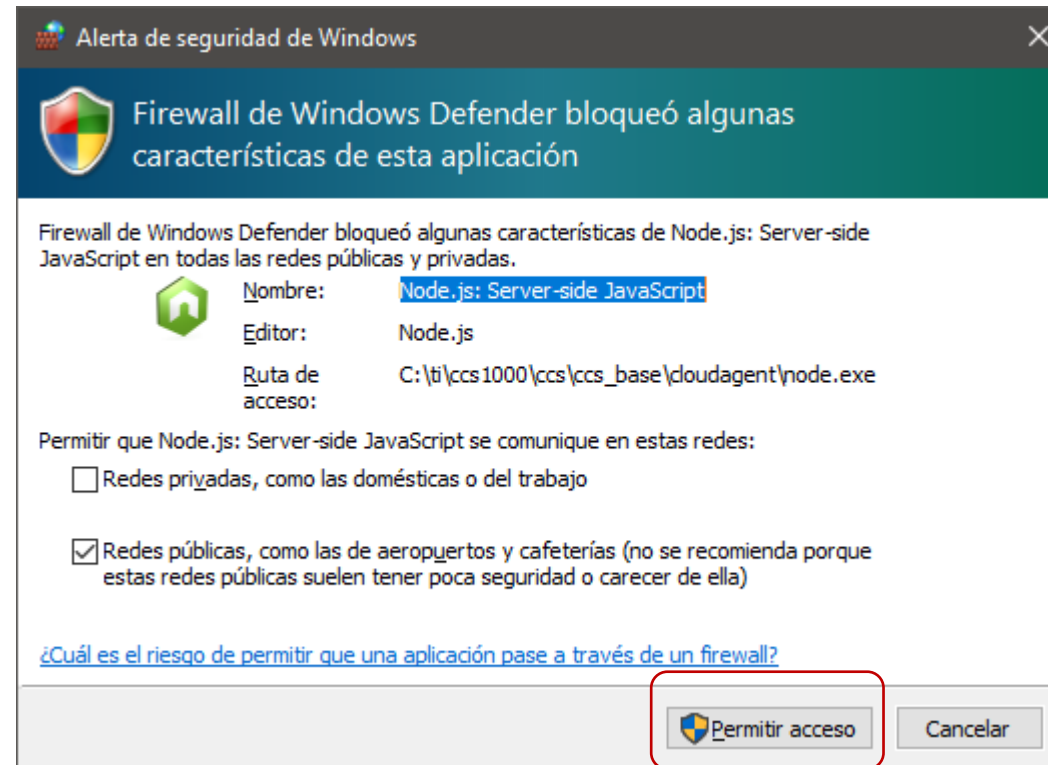
Como crear un nuevo proyecto en Code Composer usando TivaWare



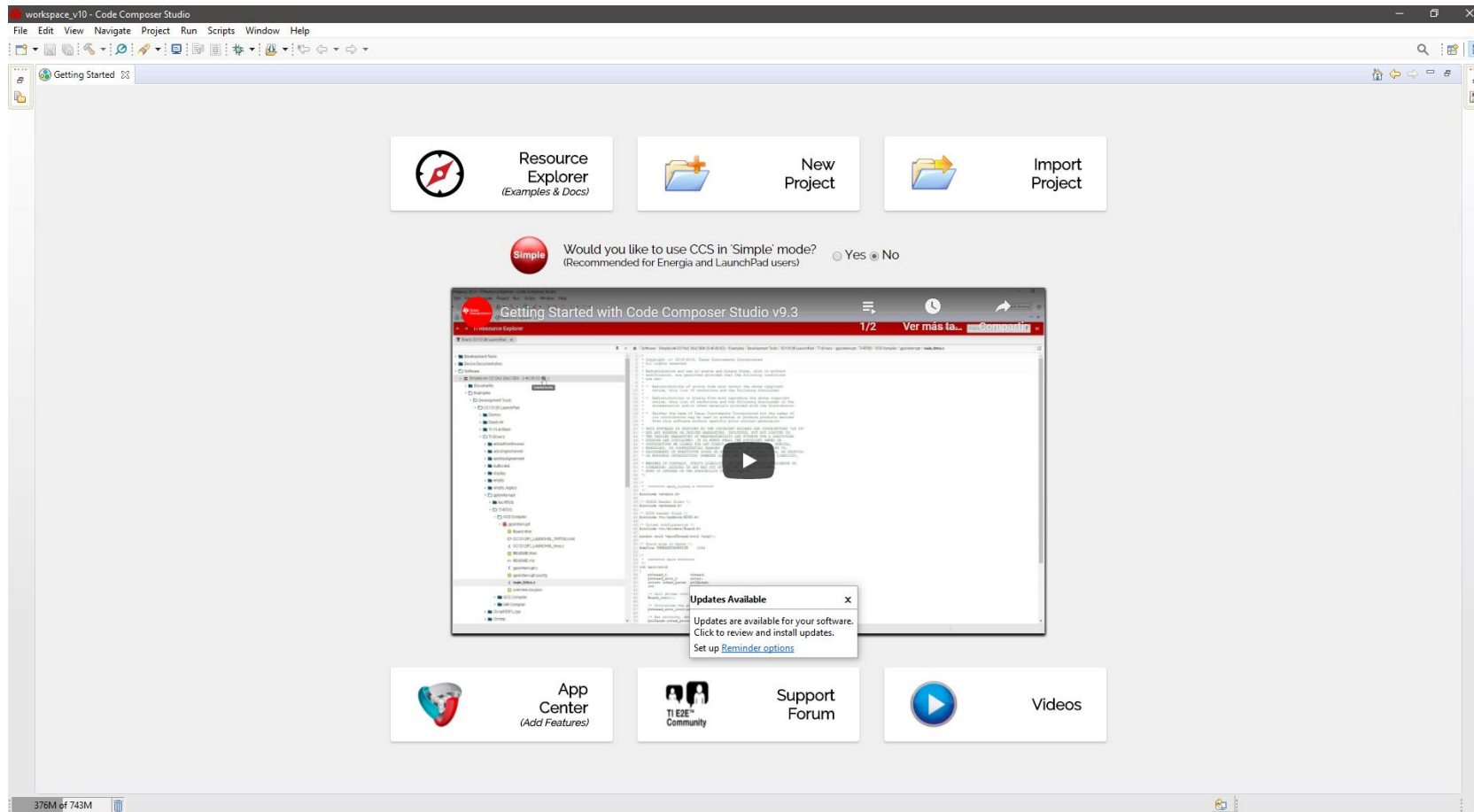
Al iniciar Code Composer Studio nos preguntará cual será la ubicación del área de trabajo, esta área será donde estaremos almacenando todos nuestros proyectos. Una vez seleccionada la ubicación pueden seleccionar que utilice dicha ubicación como default y no vuelva a preguntar, de lo contrario cada vez que se inicie les volverá a preguntar.



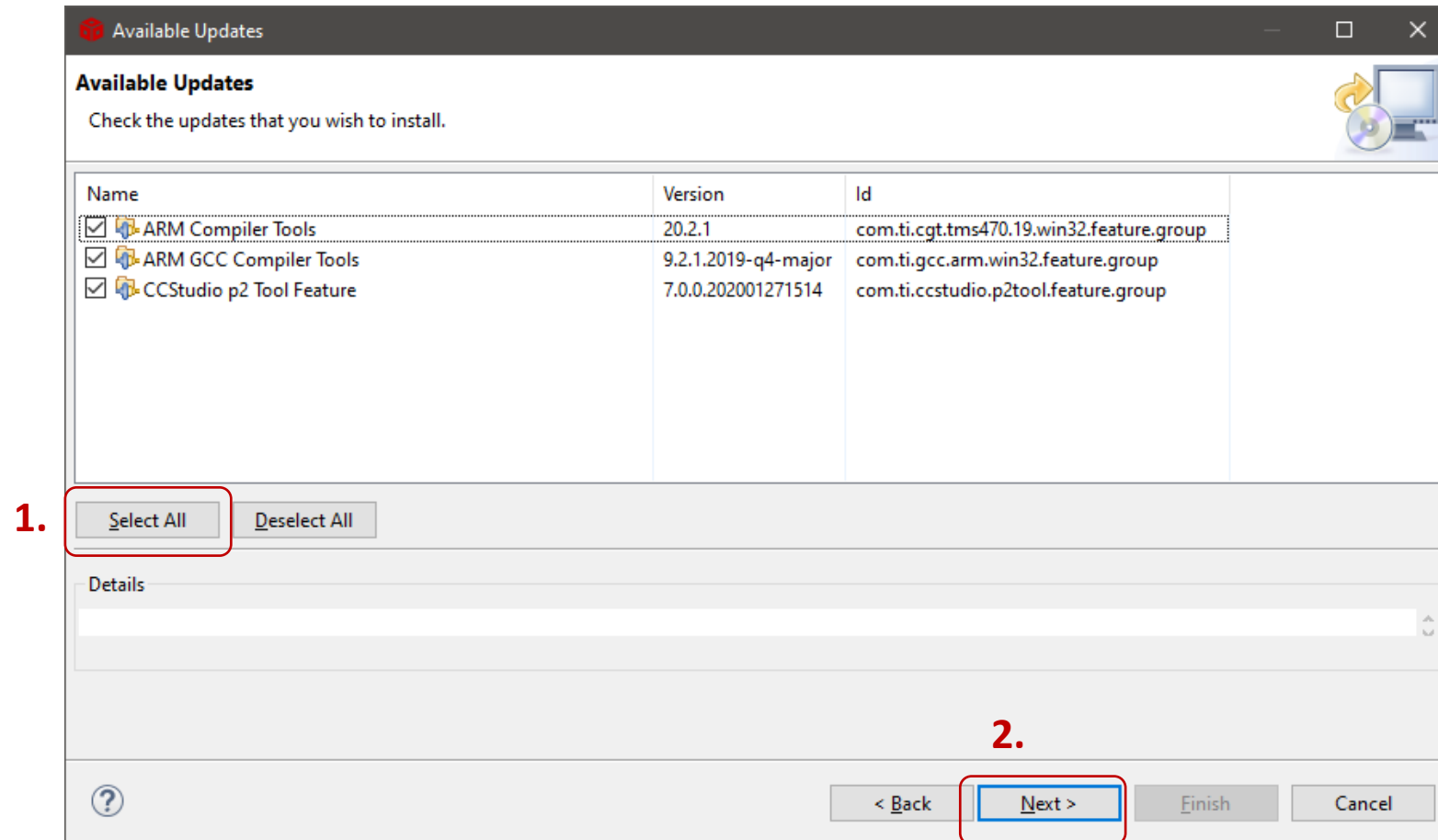
La primera vez que lo iniciemos también nos aparecerá la siguiente ventana, le damos permitir acceso

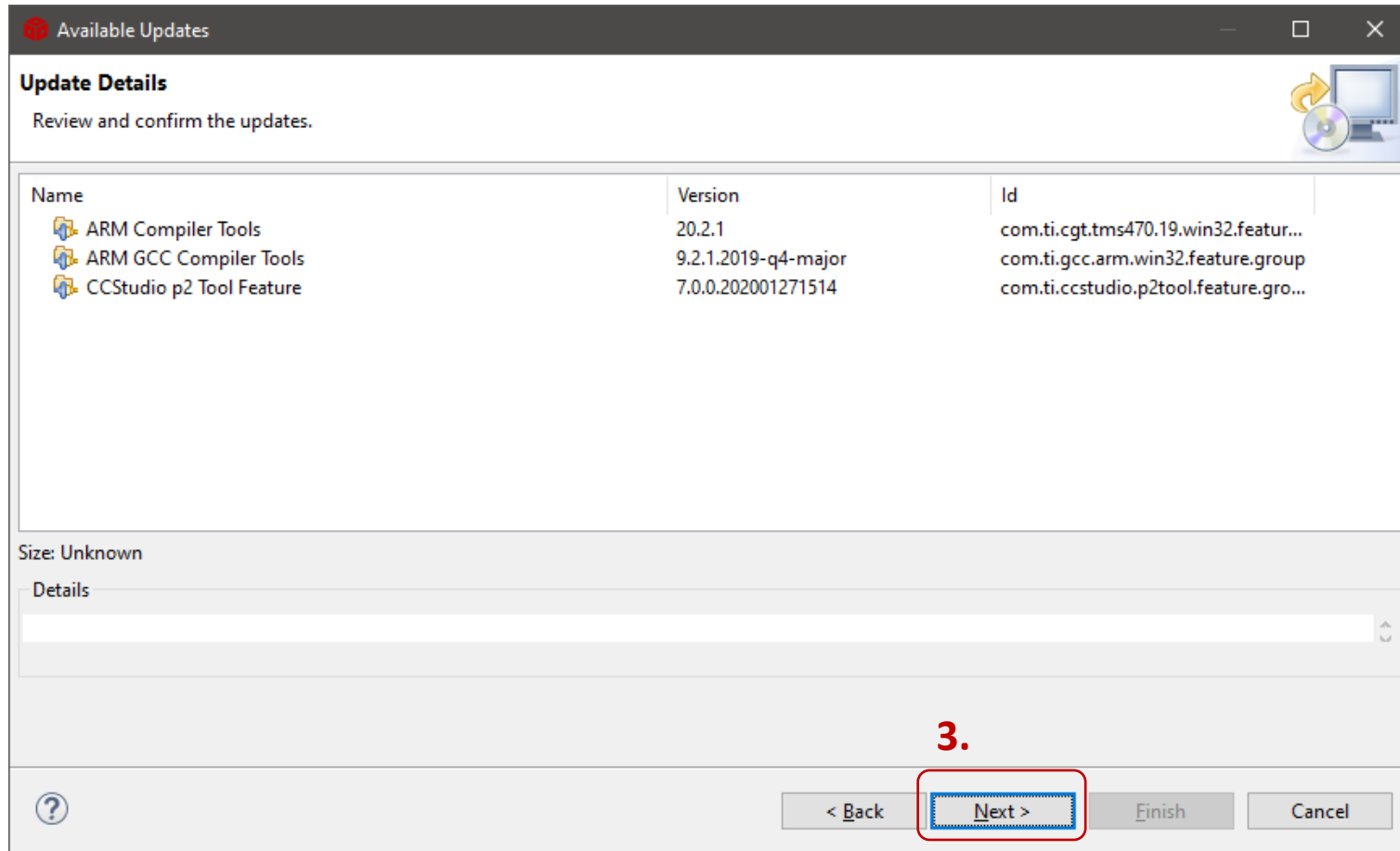


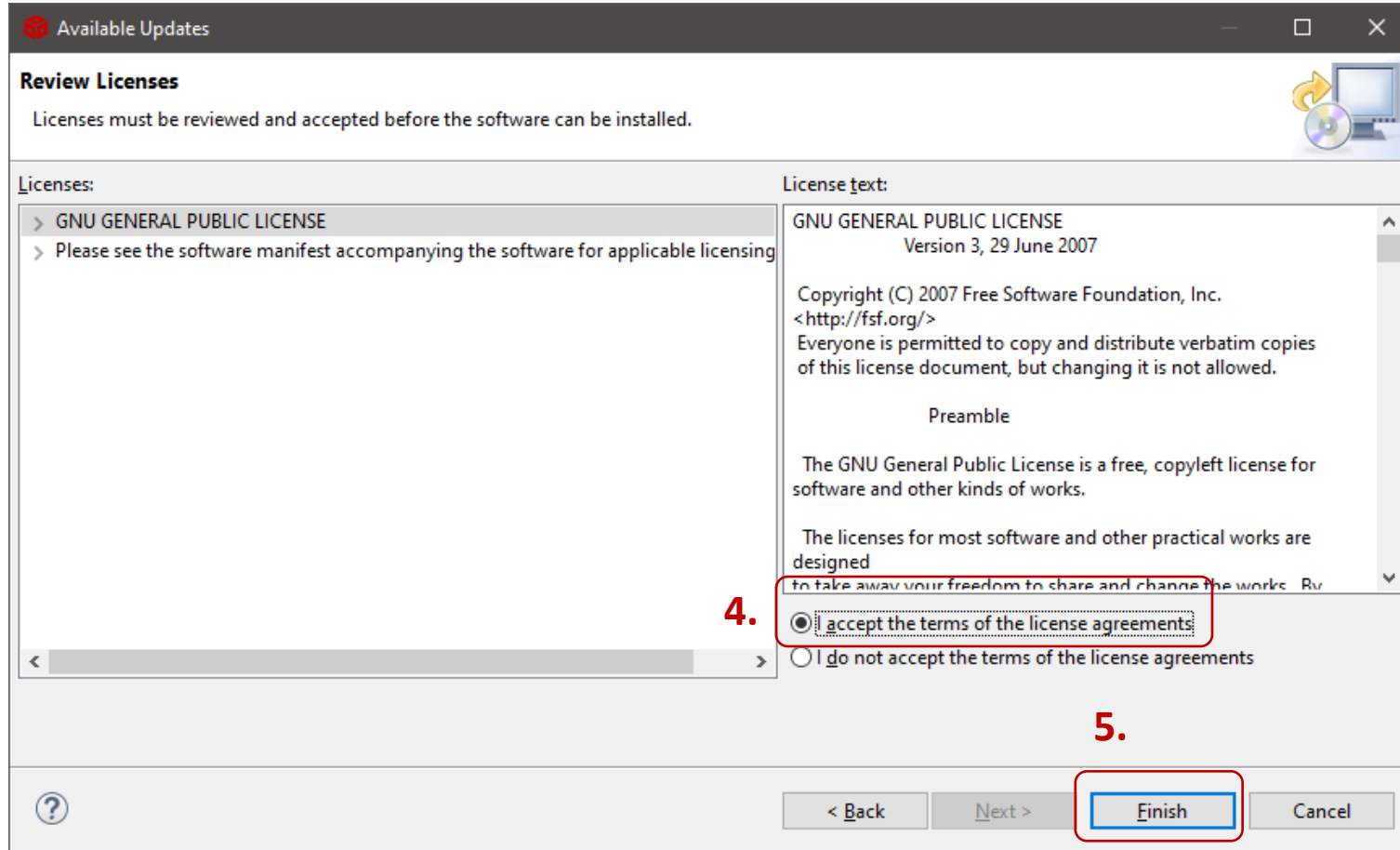
Code Composer Studio está basado en el IDE Eclipse



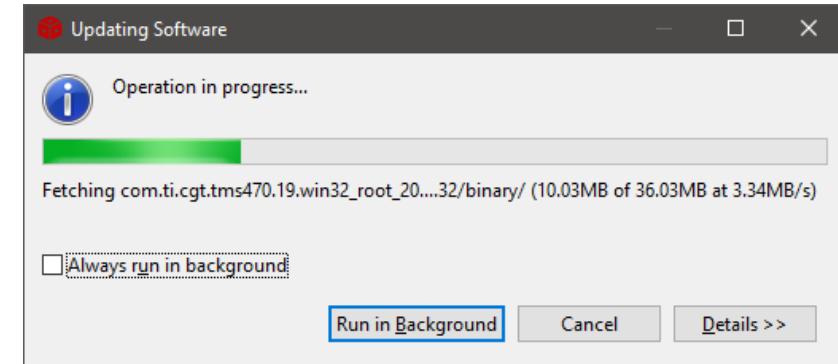
Se recomienda grandemente buscar si hay actualizaciones, para esto se pueden ir al menú *Help > Check Updates*



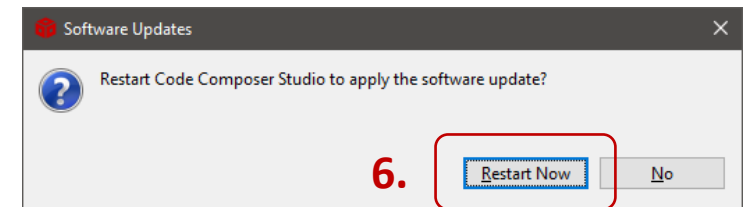




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Una vez que termine nos pedirá reiniciar CCS

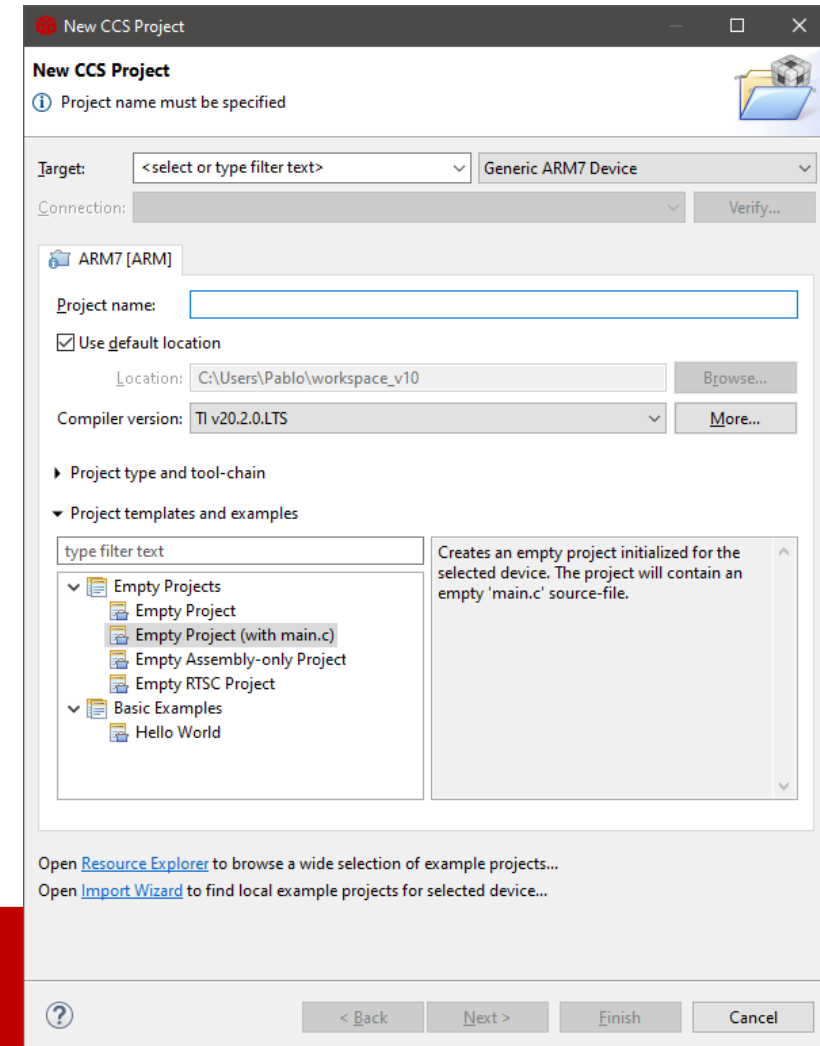


Creación de nuevo proyecto en CCS

- Para crear un nuevo proyecto:

File / New / CCS Project

Aparecerá la siguiente ventana



2. Seleccionar el tipo de conexión Stellaris In-Circuit Debug Interface (ICDI)

4. Seleccionar Empty Project (with main.c)

1. Seleccionar el modelo del microcontrolador
TIVA TM4C123GH6PM

3. Colocar el nombre del proyecto

New CCS Project

Create a new CCS Project.

Target: Tiva C Series Tiva TM4C123GH6PM

Connection: Stellaris In-Circuit Debug Interface Verify...

Cortex M [ARM]

Project name: HolaMundo

☒ Use default location

Location: C:\Users\Pablo\workspace_v10\HolaMundo Browse...

Compiler version: TI v20.2.0.LTS More...

Project type and tool-chain

Project templates and examples

type filter text

- Empty Projects
 - Empty Project
 - Empty Project (with main.c)
 - Empty Assembly-only Project
 - Empty RTSC Project
- Basic Examples
 - Hello World

Creates an empty project initialized for the selected device. The project will contain an empty 'main.c' source-file.

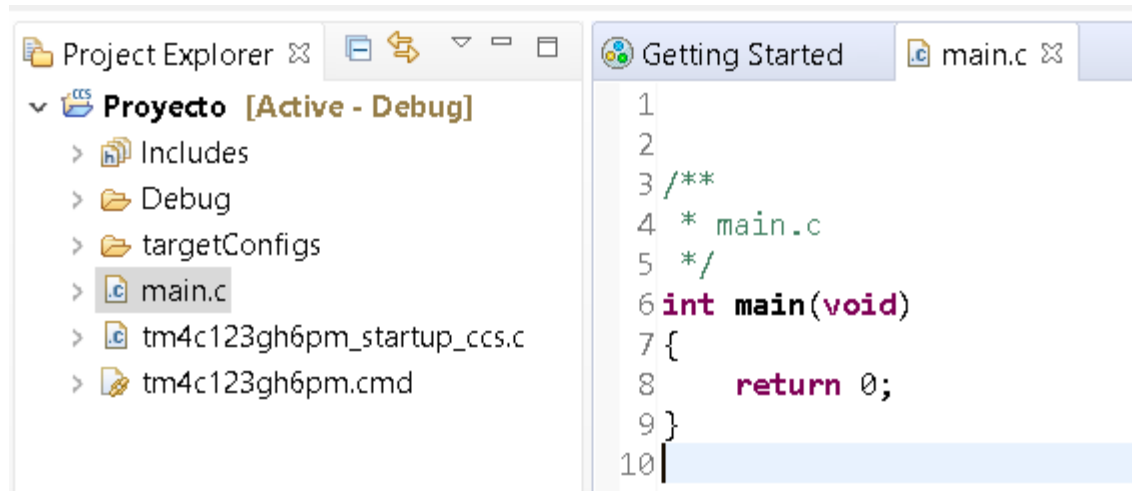
Open [Resource Explorer](#) to browse a wide selection of example projects...

Open [Import Wizard](#) to find local example projects for selected device...

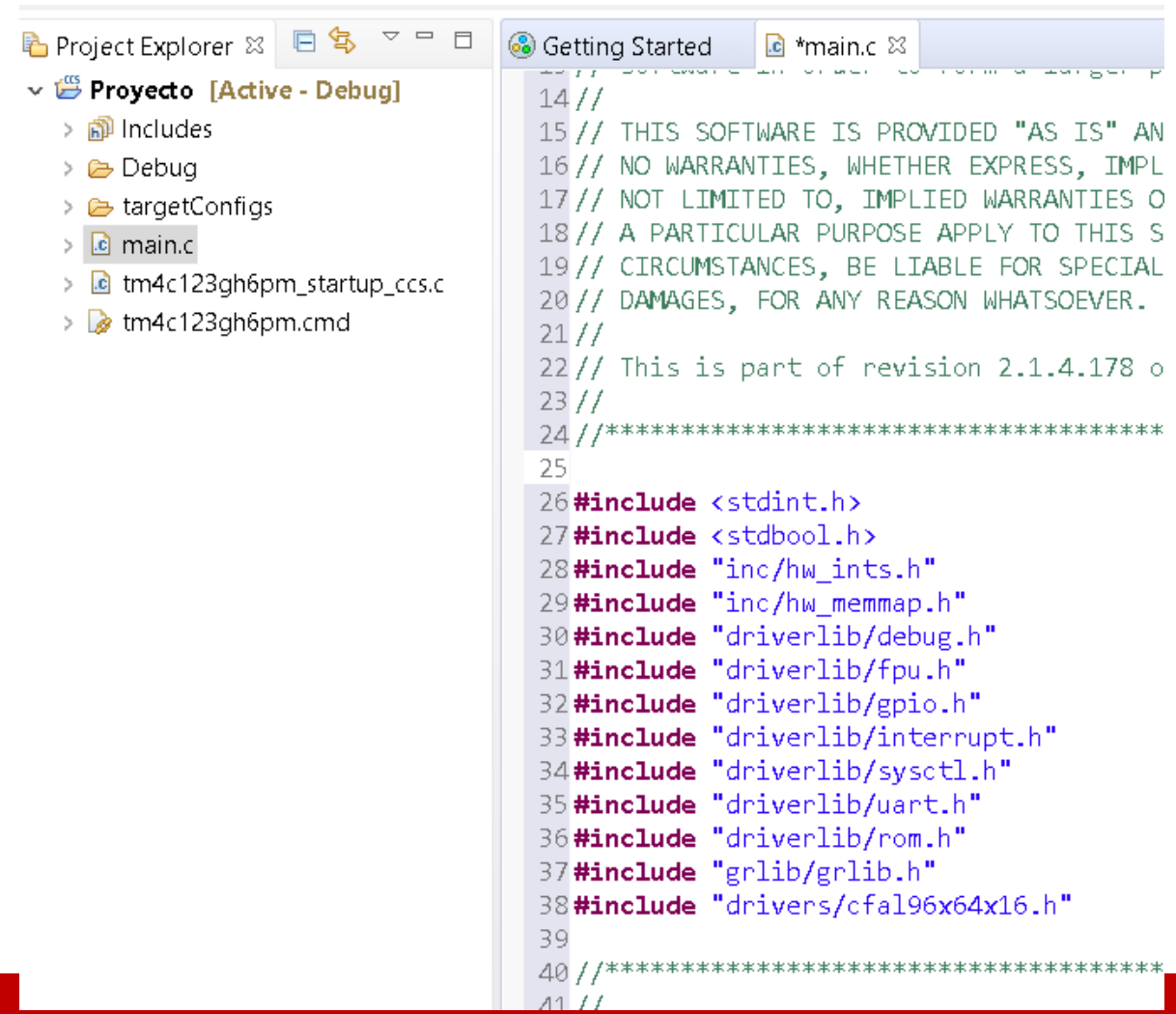
5. Darle click a Finish

Finish

Una vez creado el Proyecto podemos pegar un código ejemplo o empezar a escribir nuestro código



```
1
2
3 /**
4  * main.c
5  */
6 int main(void)
7 {
8     return 0;
9 }
10 |
```



```
14 //
15 // THIS SOFTWARE IS PROVIDED "AS IS" AN
16 // NO WARRANTIES, WHETHER EXPRESS, IMPL
17 // NOT LIMITED TO, IMPLIED WARRANTIES O
18 // A PARTICULAR PURPOSE APPLY TO THIS S
19 // CIRCUMSTANCES, BE LIABLE FOR SPECIAL
20 // DAMAGES, FOR ANY REASON WHATSOEVER.
21 //
22 // This is part of revision 2.1.4.178 o
23 //
24 //*****
25
26 #include <stdint.h>
27 #include <stdbool.h>
28 #include "inc/hw_ints.h"
29 #include "inc/hw_memmap.h"
30 #include "driverlib/debug.h"
31 #include "driverlib/fpu.h"
32 #include "driverlib/gpio.h"
33 #include "driverlib/interrupt.h"
34 #include "driverlib/sysctl.h"
35 #include "driverlib/uart.h"
36 #include "driverlib/rom.h"
37 #include "glib/glib.h"
38 #include "drivers/cfal96x64x16.h"
39
40 //*****
41 //
```

Si compilamos nos dará errors para eliminarlos, es necesario agregar las librerías a nuestro proyecto

```
26 #include <stdint.h>
27 #include <stdbool.h>
28 #include "inc/hw_ints.h"
29 #include "inc/hw_memmap.h"
30 #include "driverlib/debug.h"
31 #include "driverlib/fpu.h"
32 #include "driverlib/gpio.h"
33 #include "driverlib/interrupt.h"
34 #include "driverlib/sysctl.h"
35 #include "driverlib/uart.h"
36 #include "driverlib/rom.h"
37 #include "glib/glib.h"
38 #include "drivers/cfal96x64x16.h"
39
40 //*****
41 //
42 // \addtogroup example list
```

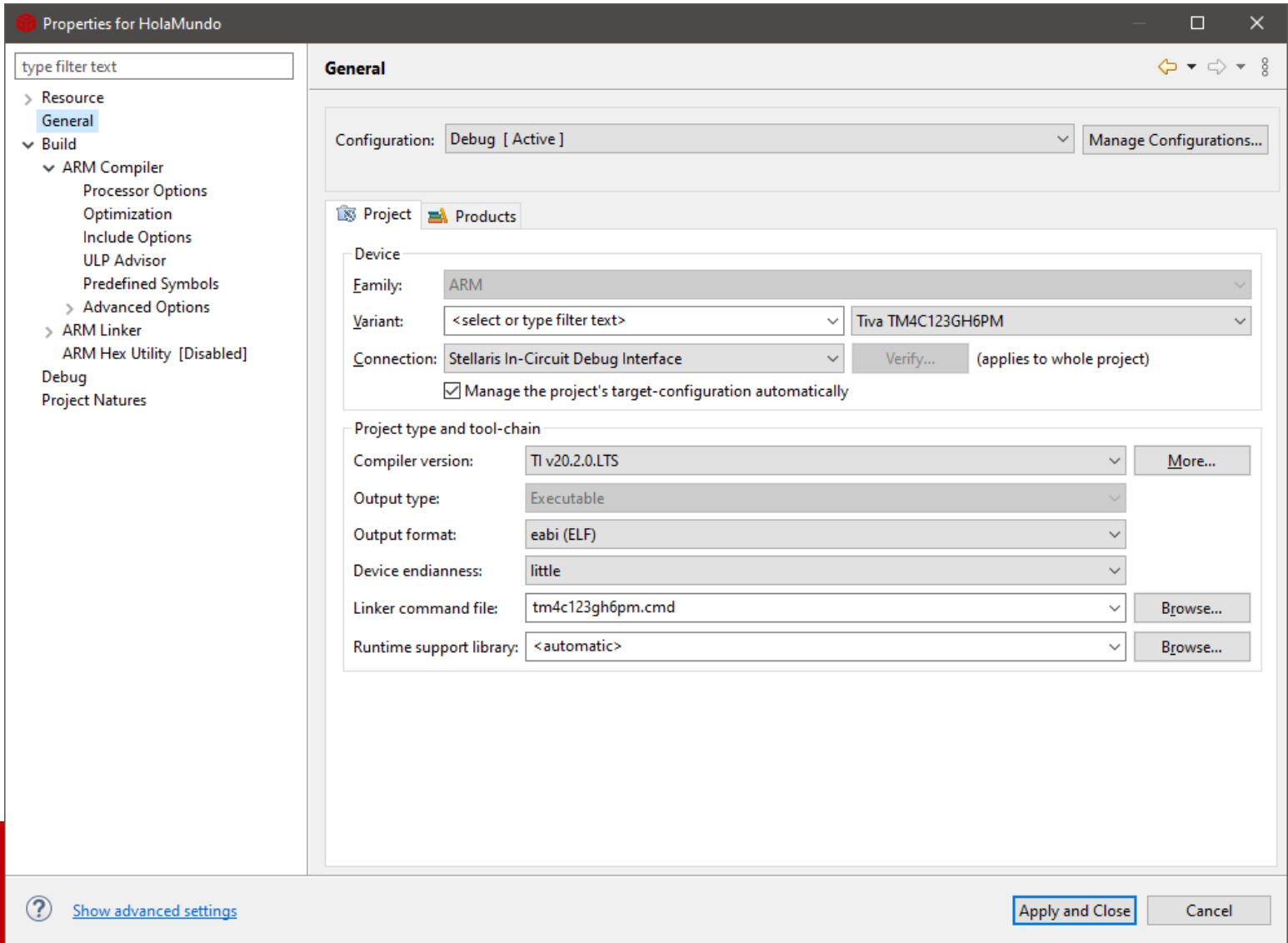
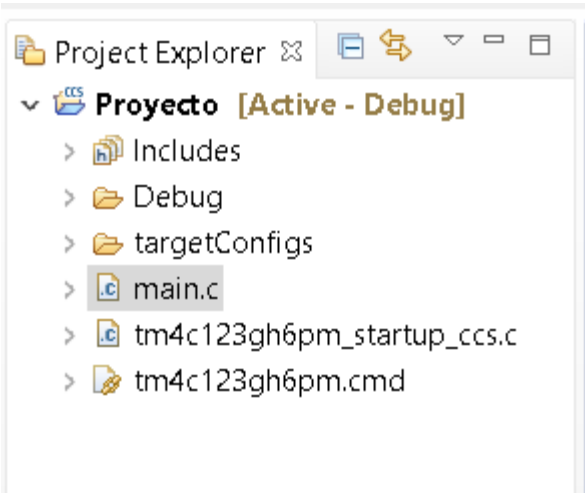
Problems

3 errors, 0 warnings, 0 others

Description	Resource	Path
Errors (3 items)		
#1965 cannot open source file "inc/hw_ints.h"	main.c	/Proyecto
gmake: *** [main.obj] Error 1	Proyecto	
gmake: Target 'all' not remade because of errors.	Proyecto	

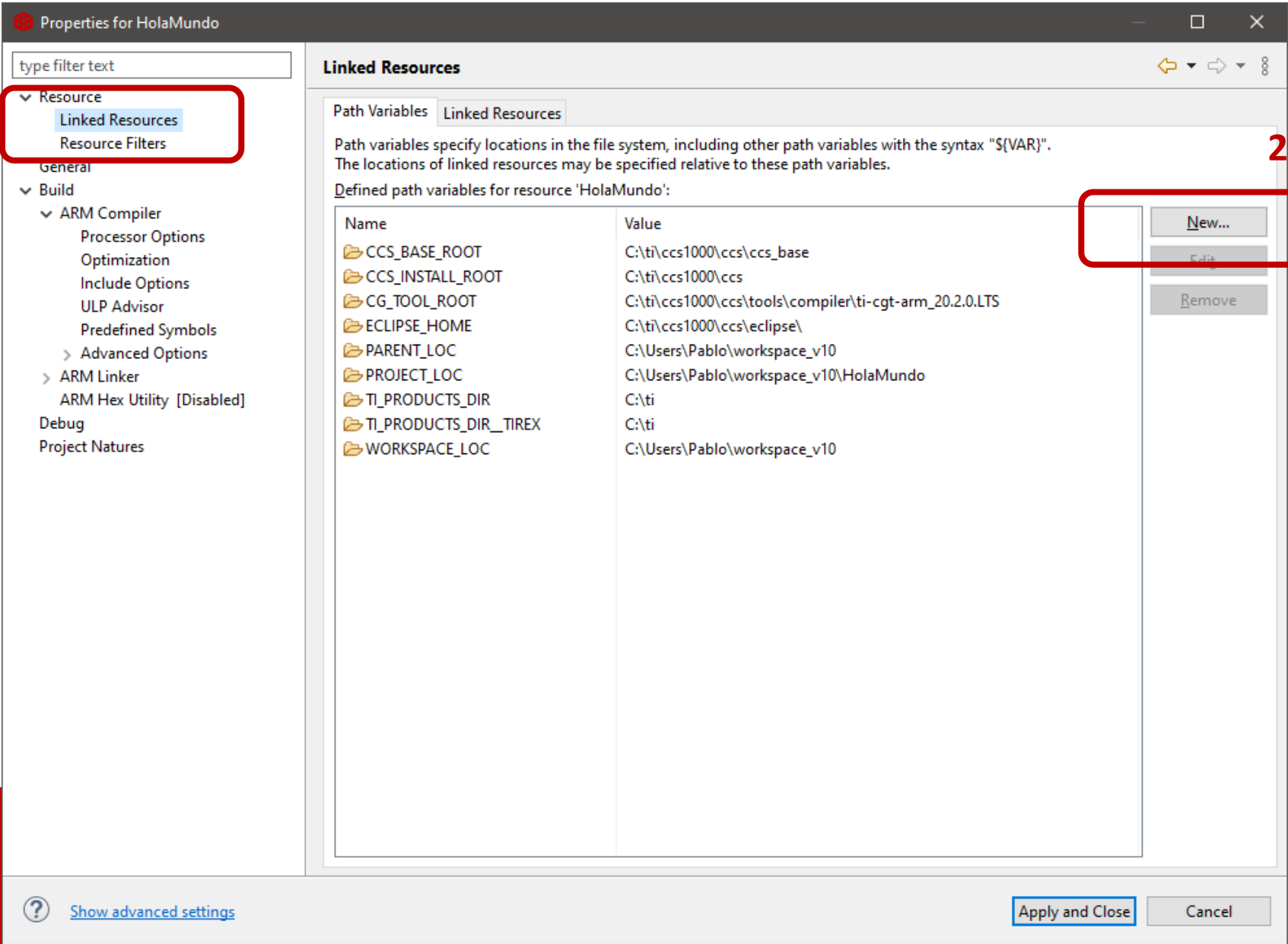
Click derecho sobre el Proyecto y seleccionar *Properties*

Nos aparecerá la siguiente ventana



Click derecho sobre el Proyecto y seleccionar *Properties*

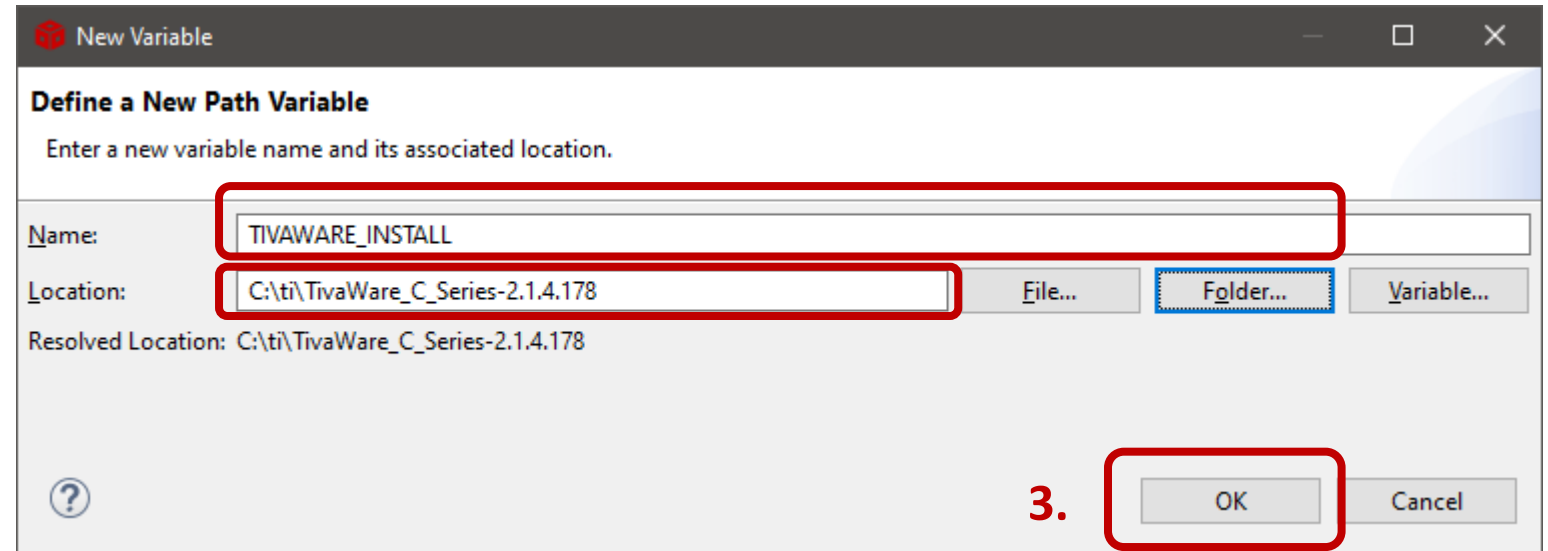
1. Buscar dentro de *Resource* > *Linked Resources*



2. Darle click en *New*

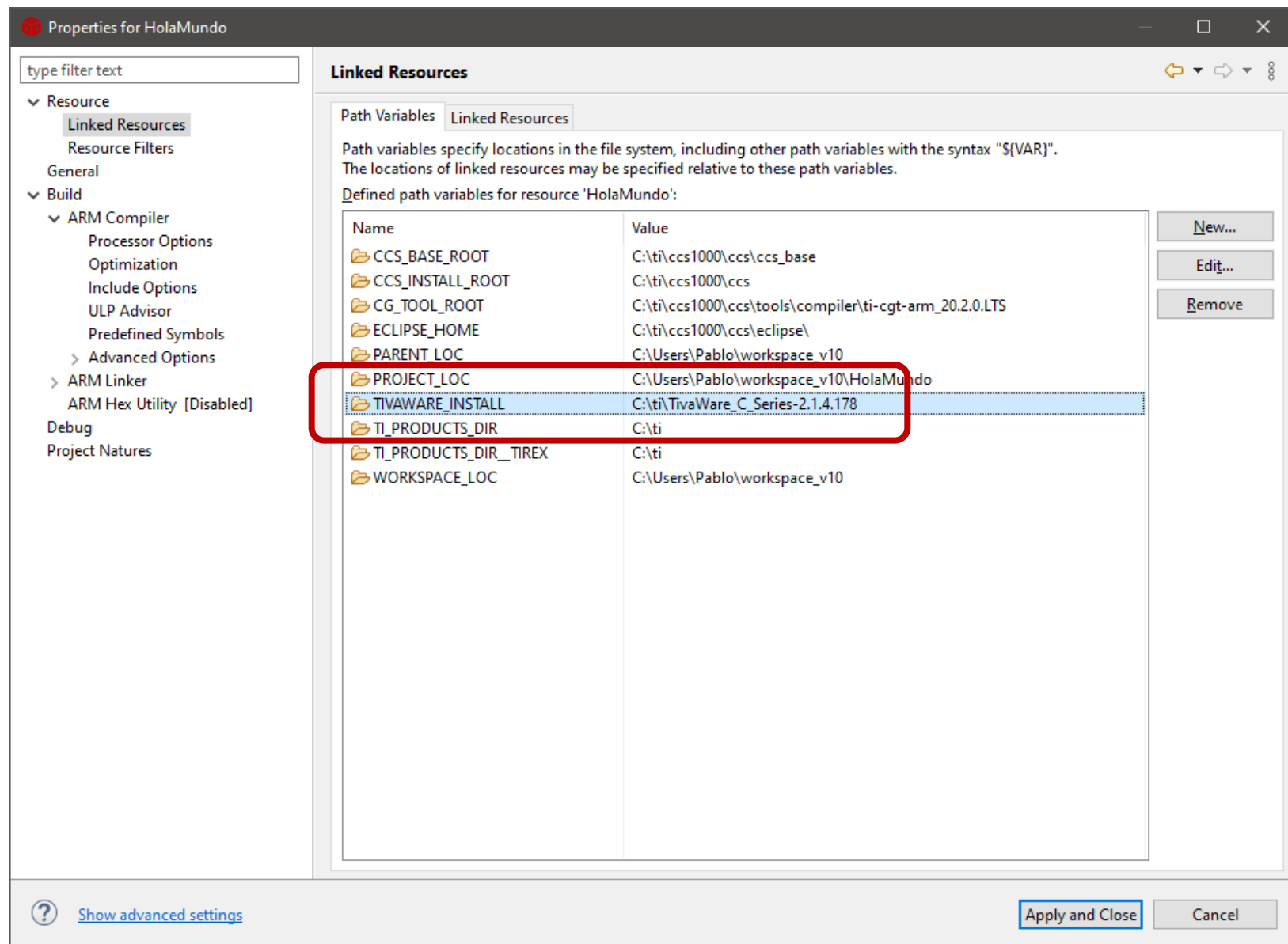
**1. Colocar como nombre:
TIVAWARE_INSTALL**

**2. Pegar la ruta del
directorio donde se
instaló las librerías**

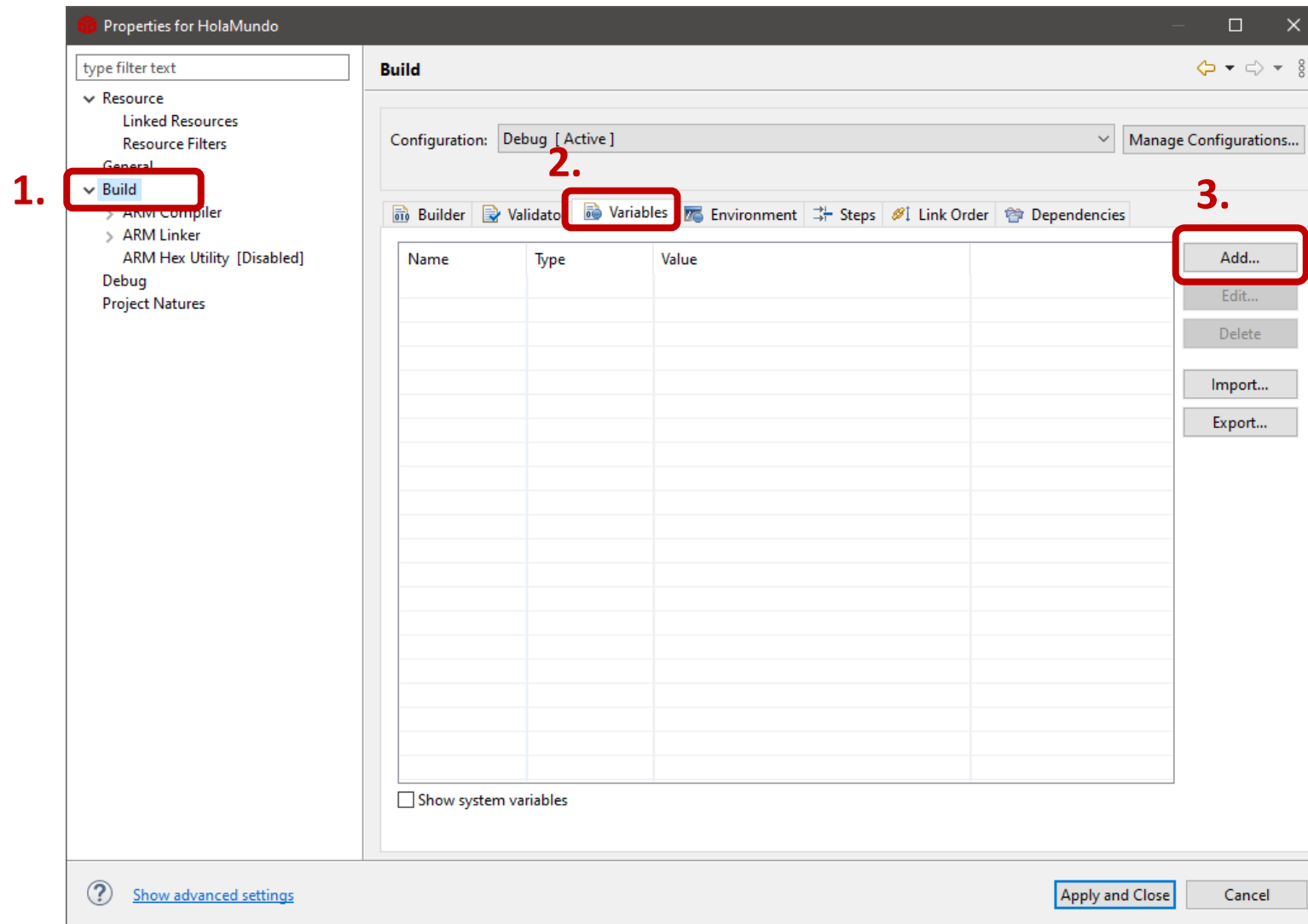


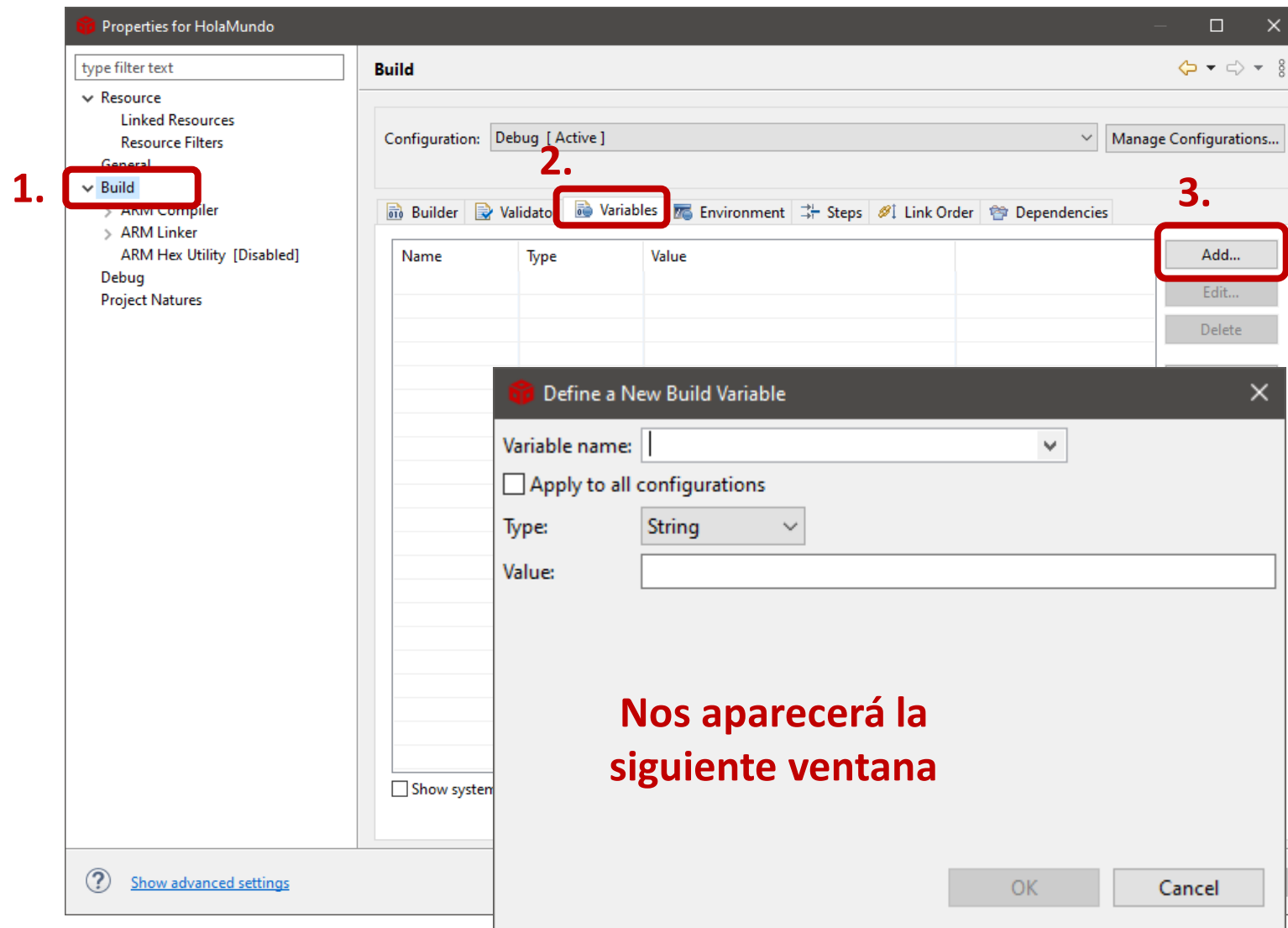
C:\ti\TivaWare_C_Series-2.1.4.178

**Verificar que
aparezca la variable
que acabamos de
crear**



Luego irse a la
opción *Build*

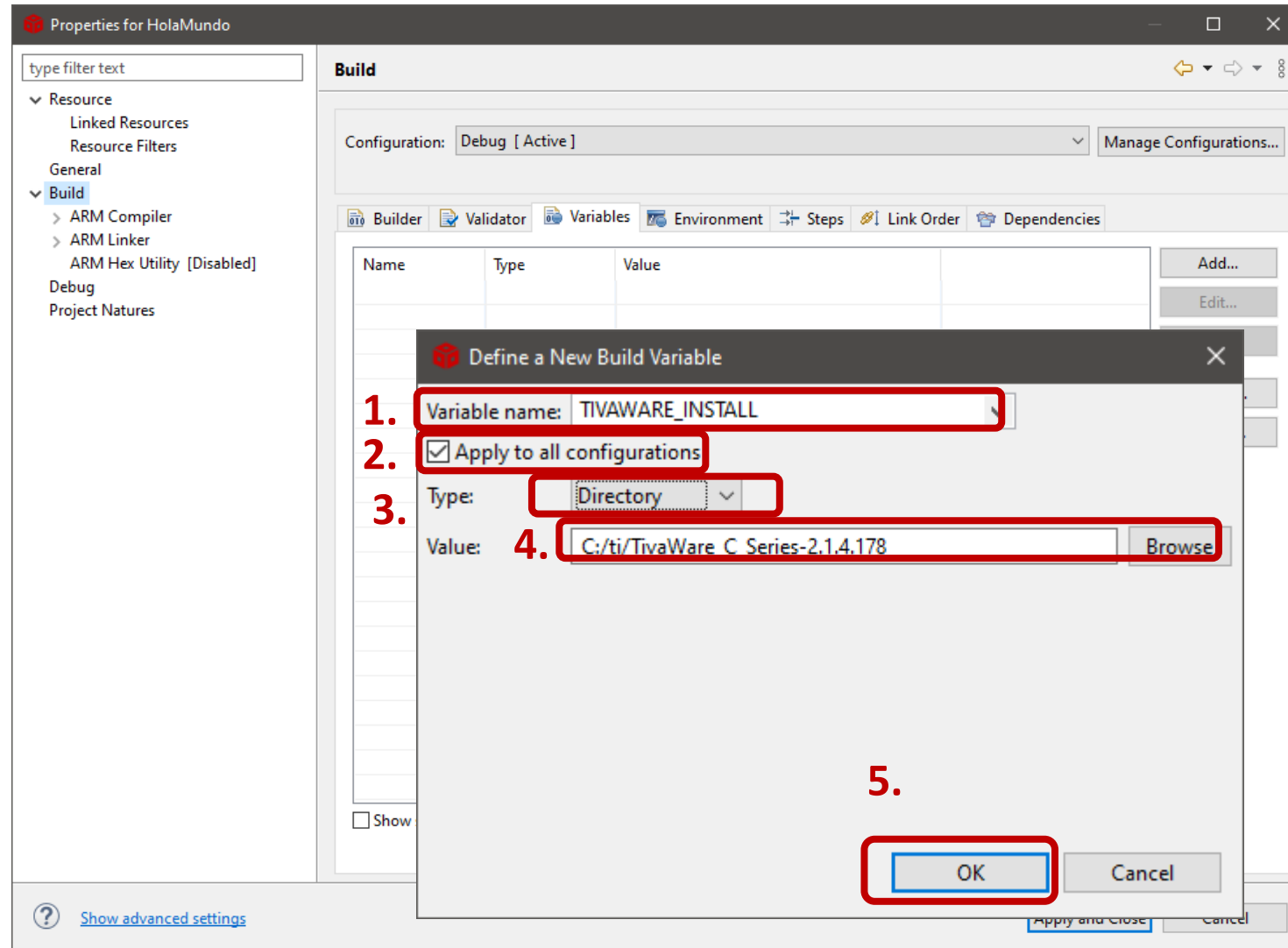




1. Colocamos en
Variable name:
TIVAWARE_INSTALL

2. Habilitamos que
se aplique en todas
las configuraciones

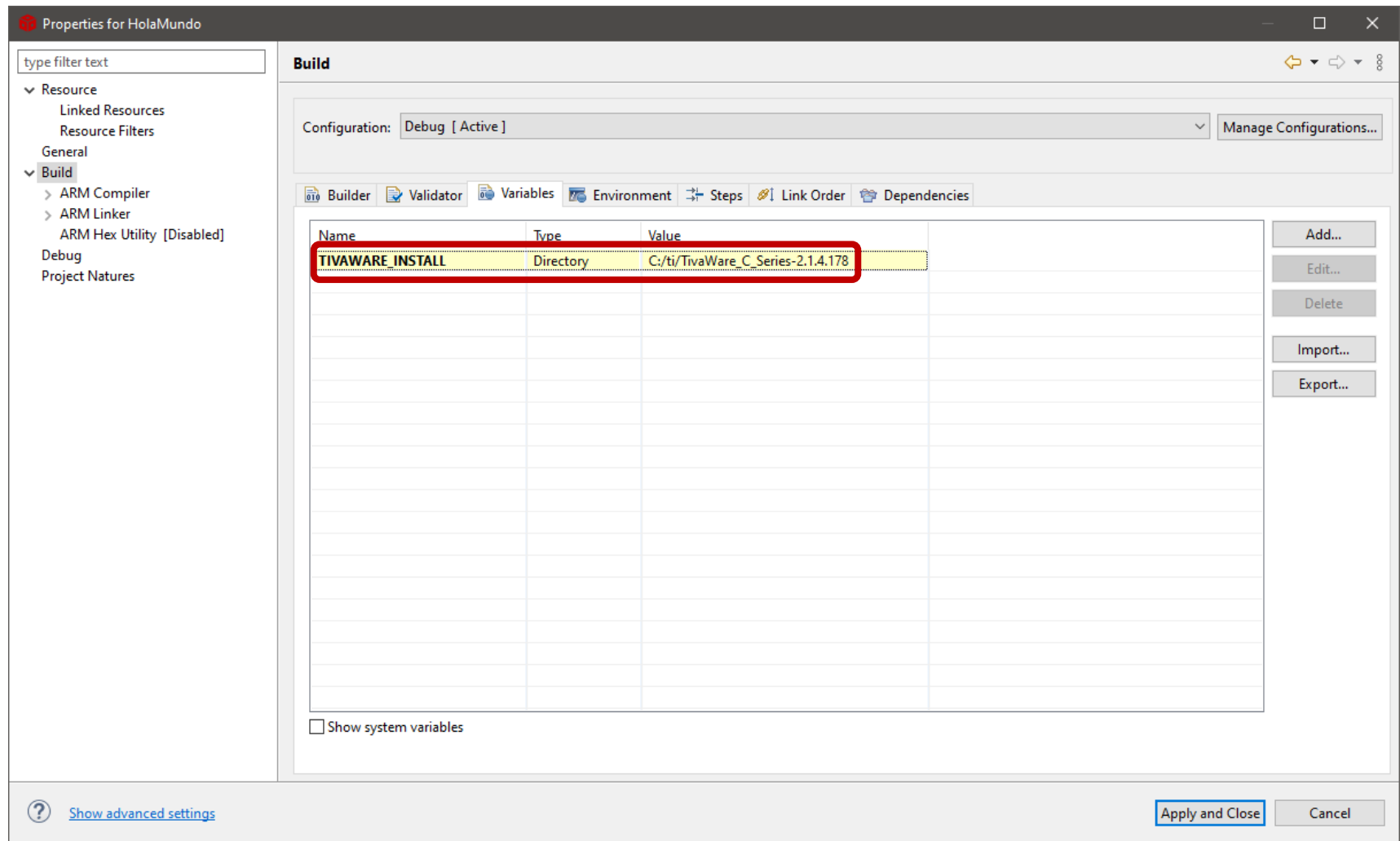
3. Seleccionamos
en Type: Directory

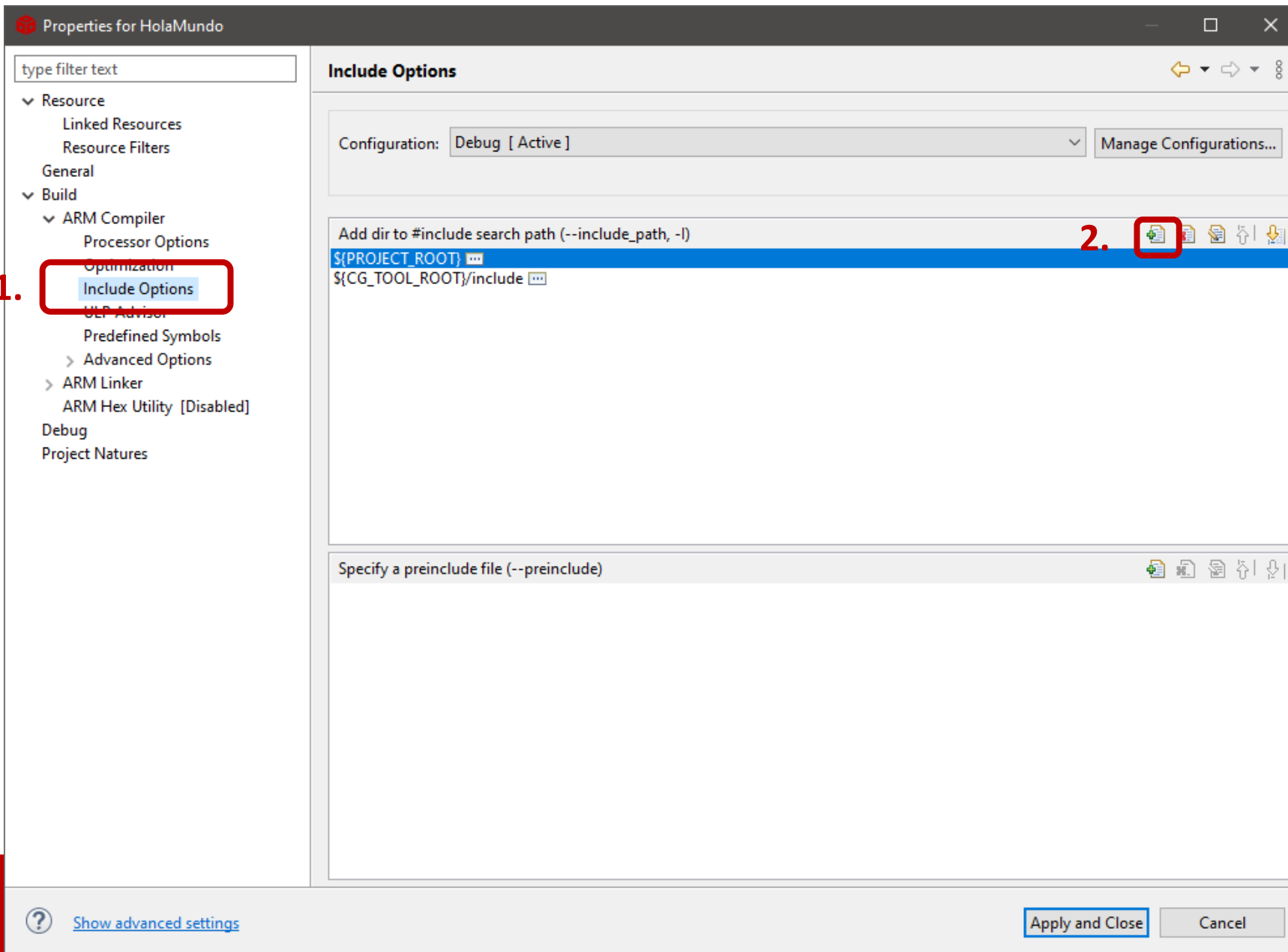


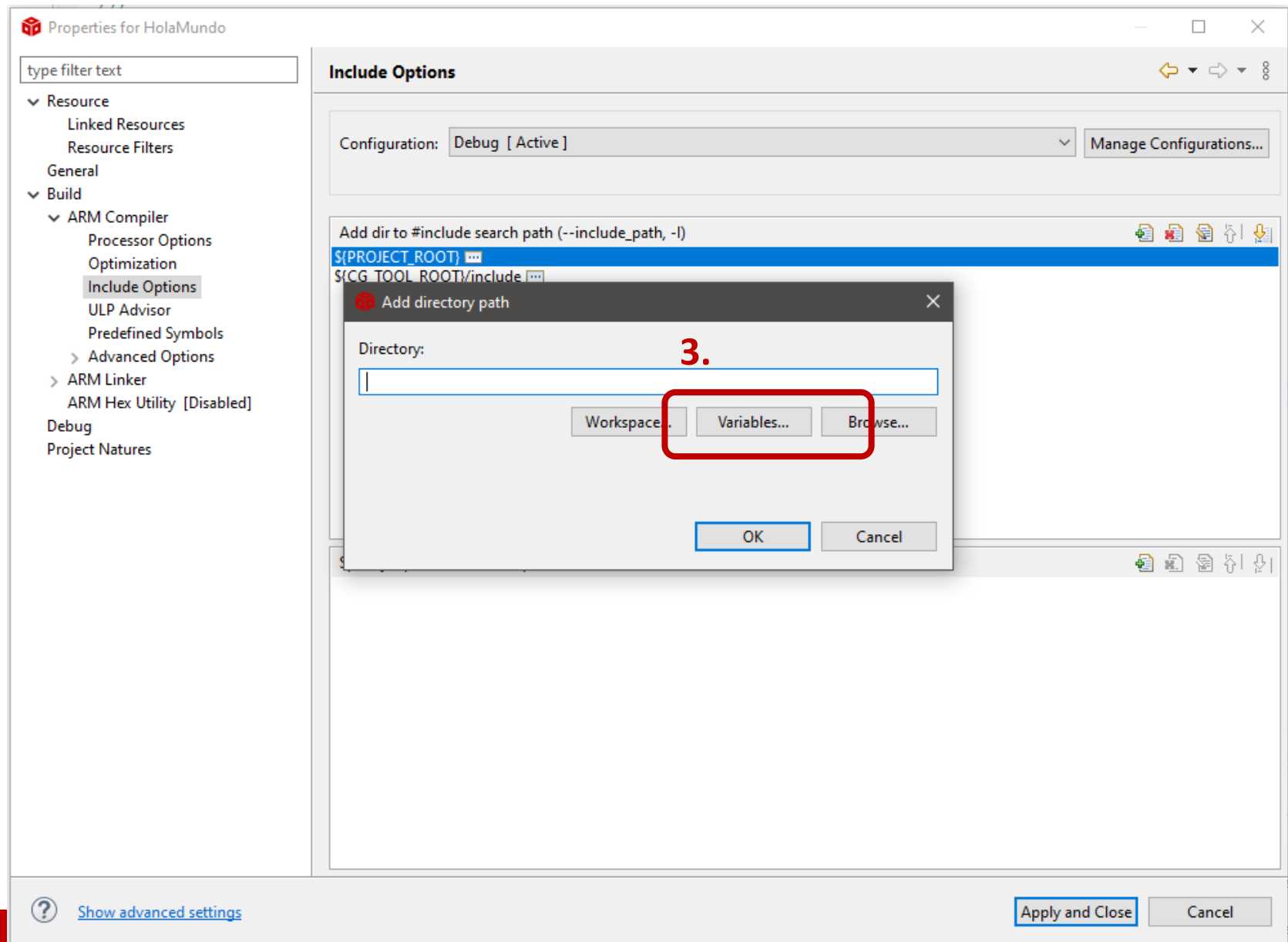
4. Seleccionamos
la ubicación

5.

**Verificar que
aparezca la variable
que acabamos de
crear**

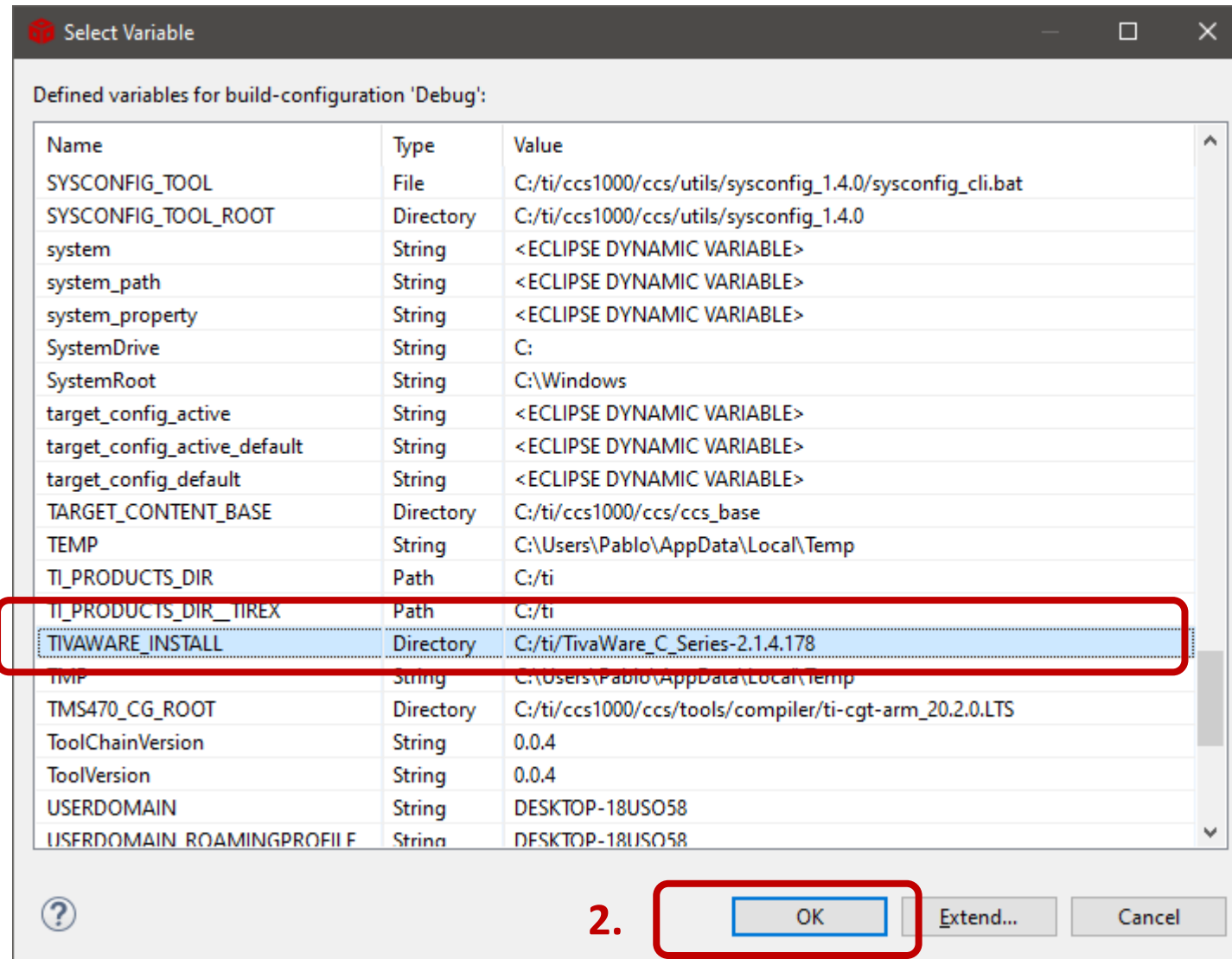


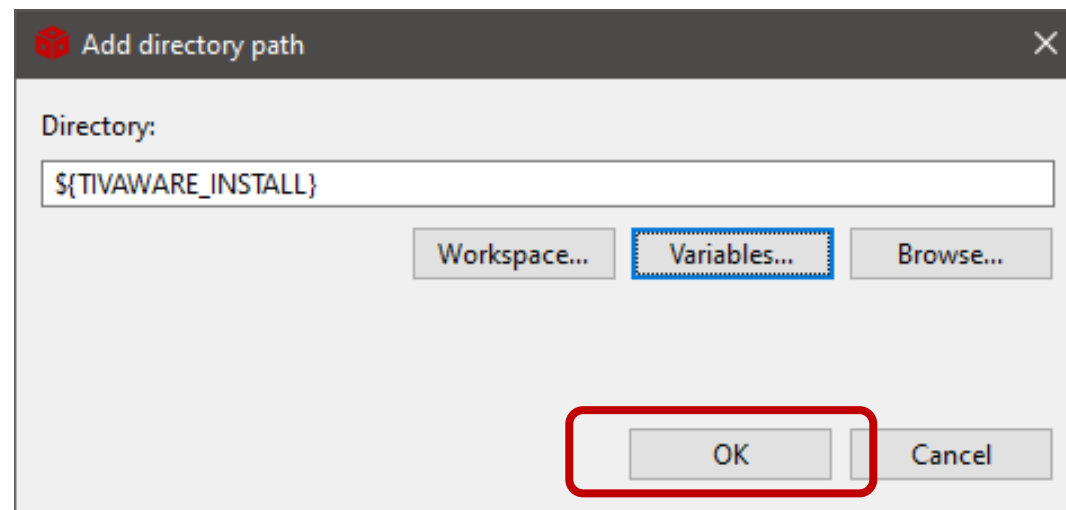


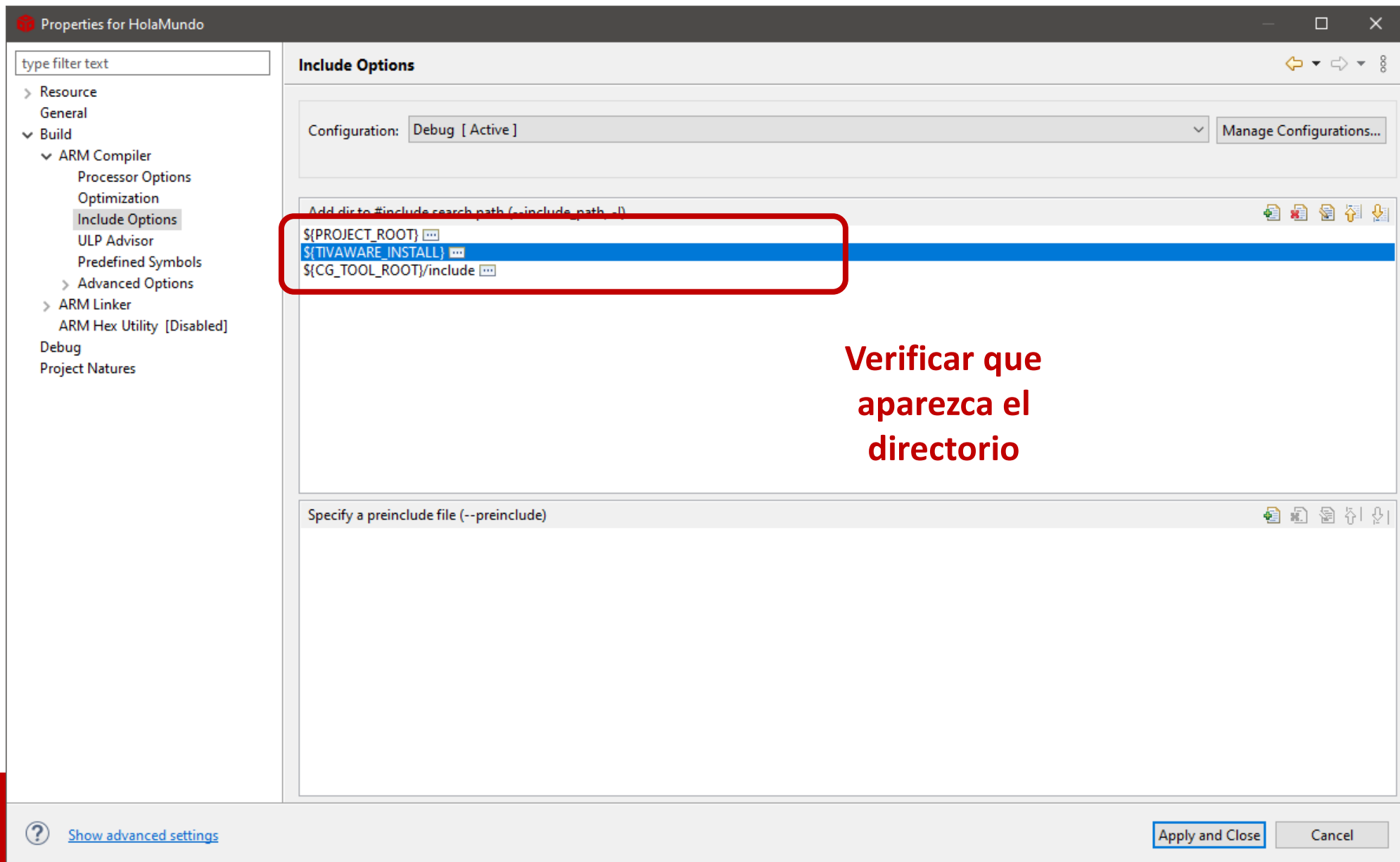


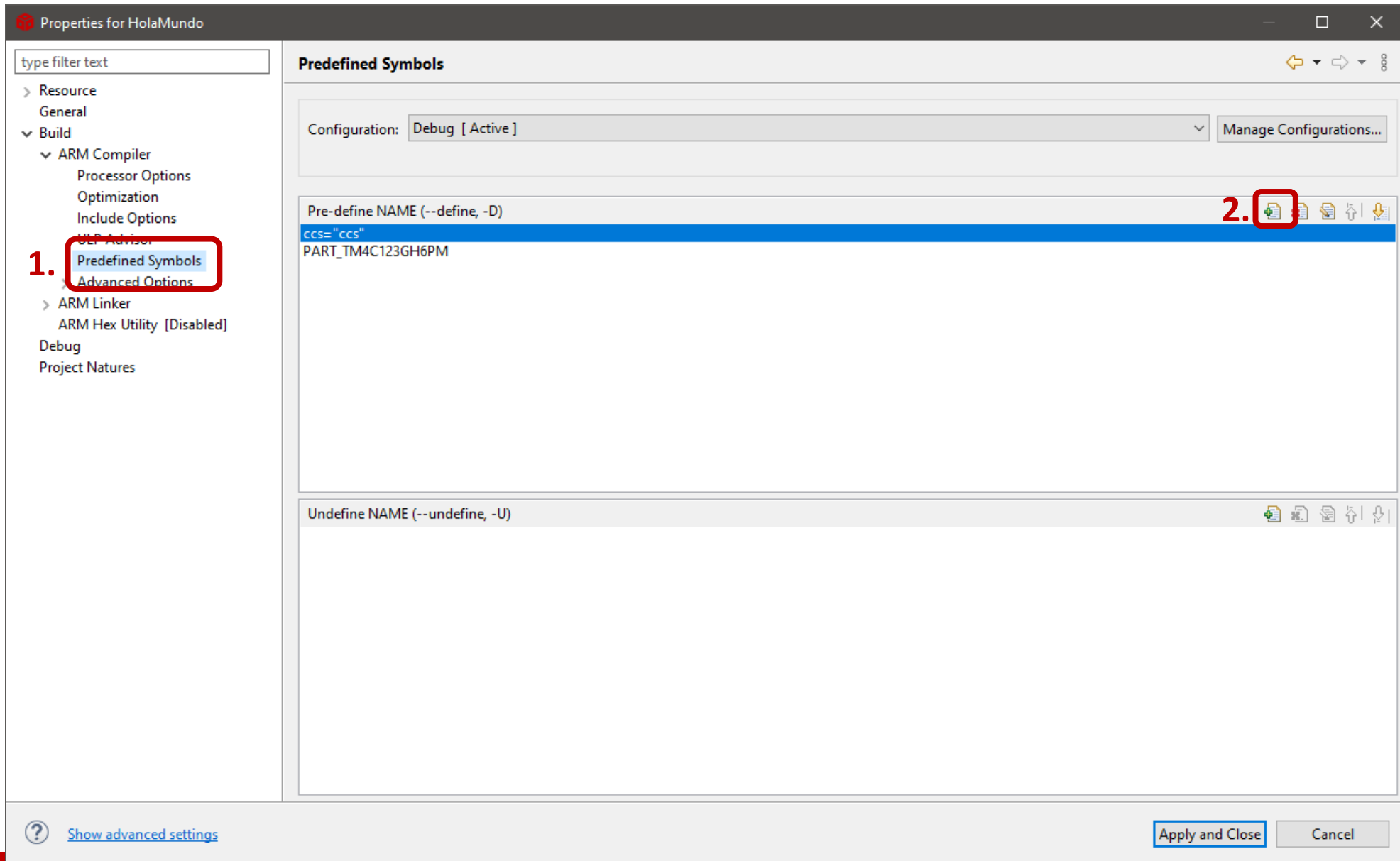
Nos aparecerá la siguiente ventana, en donde tendremos que buscar la variable **TIVAWARE_INSTALL**

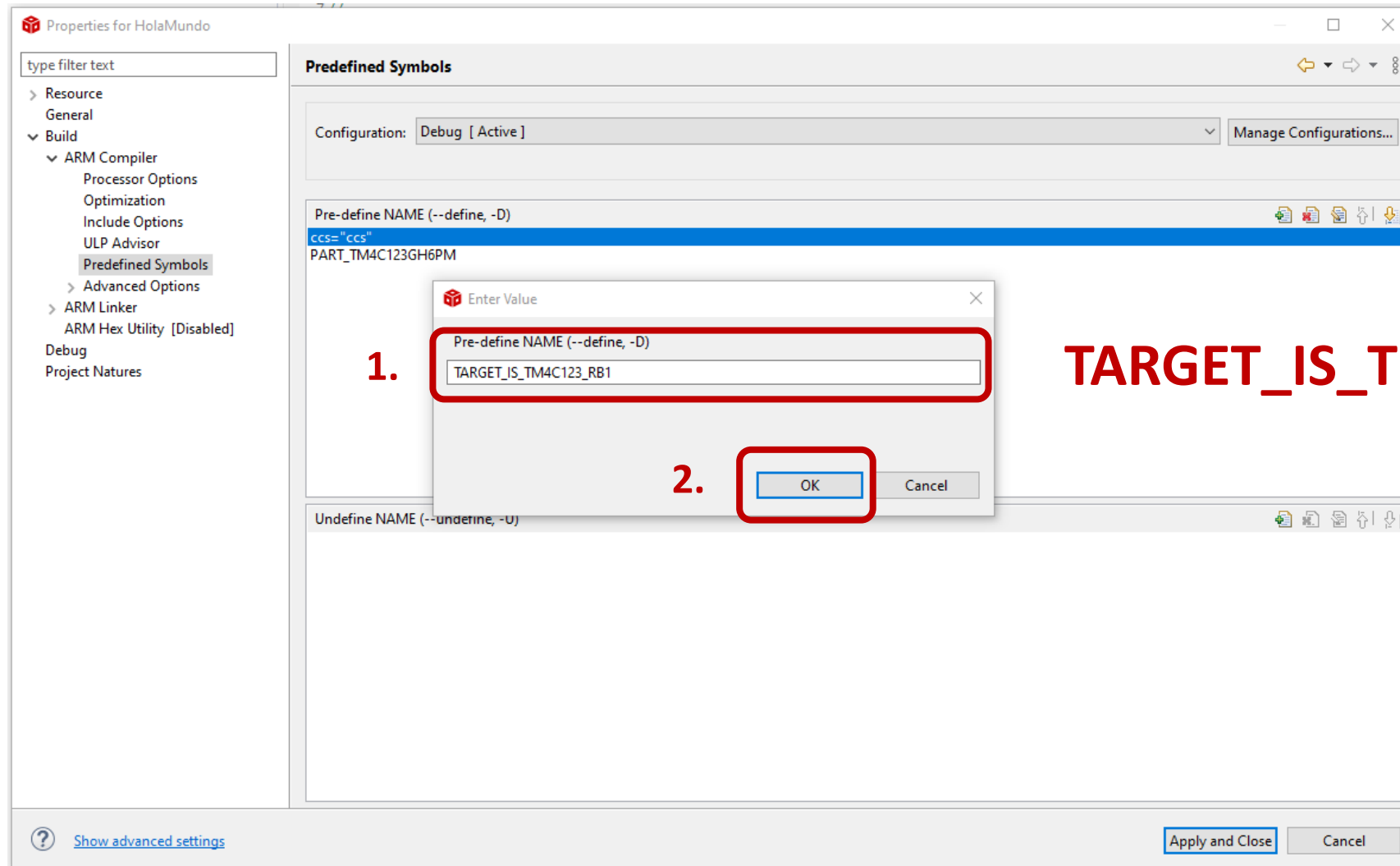
1.

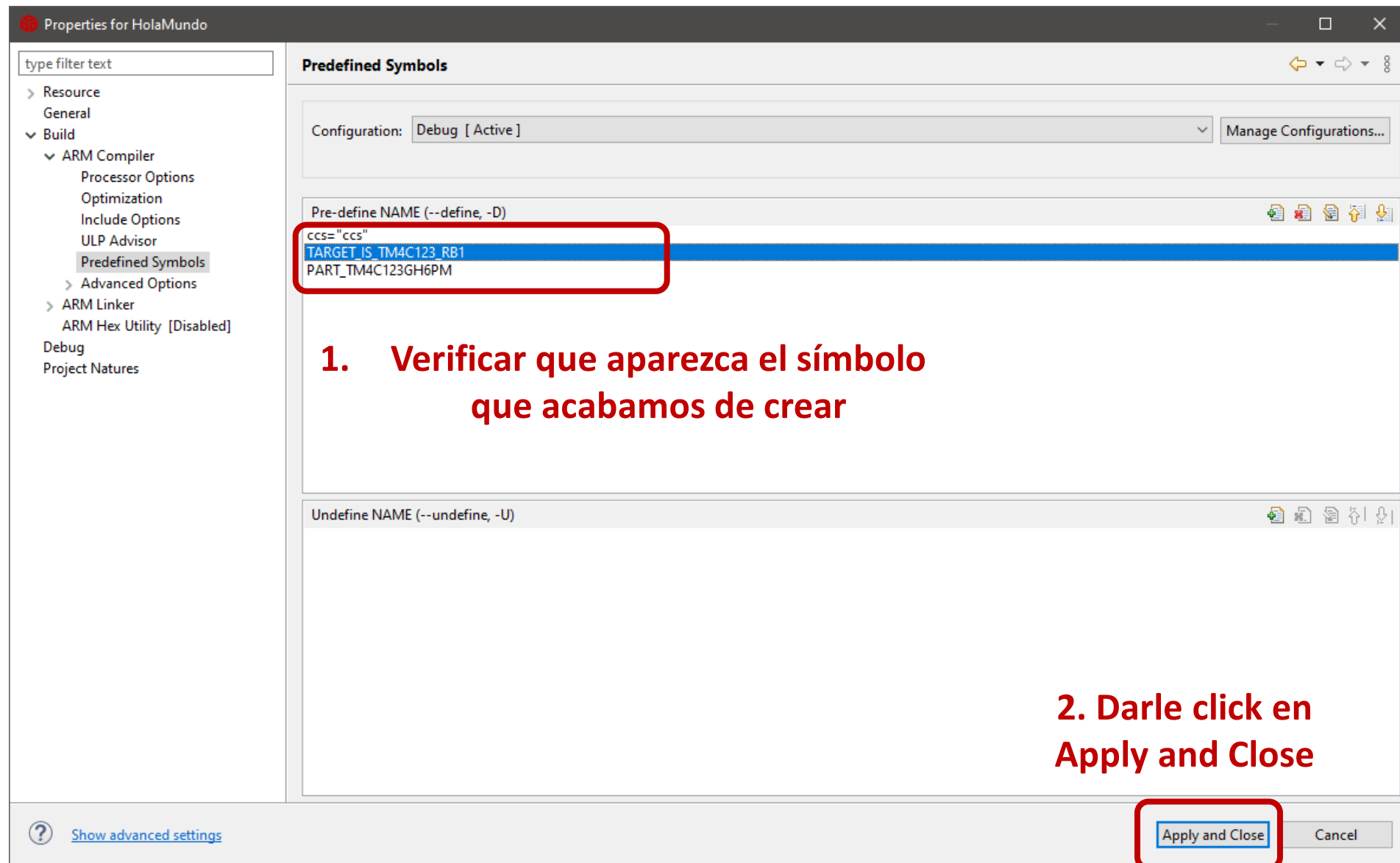




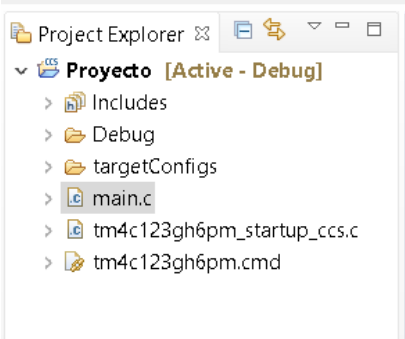




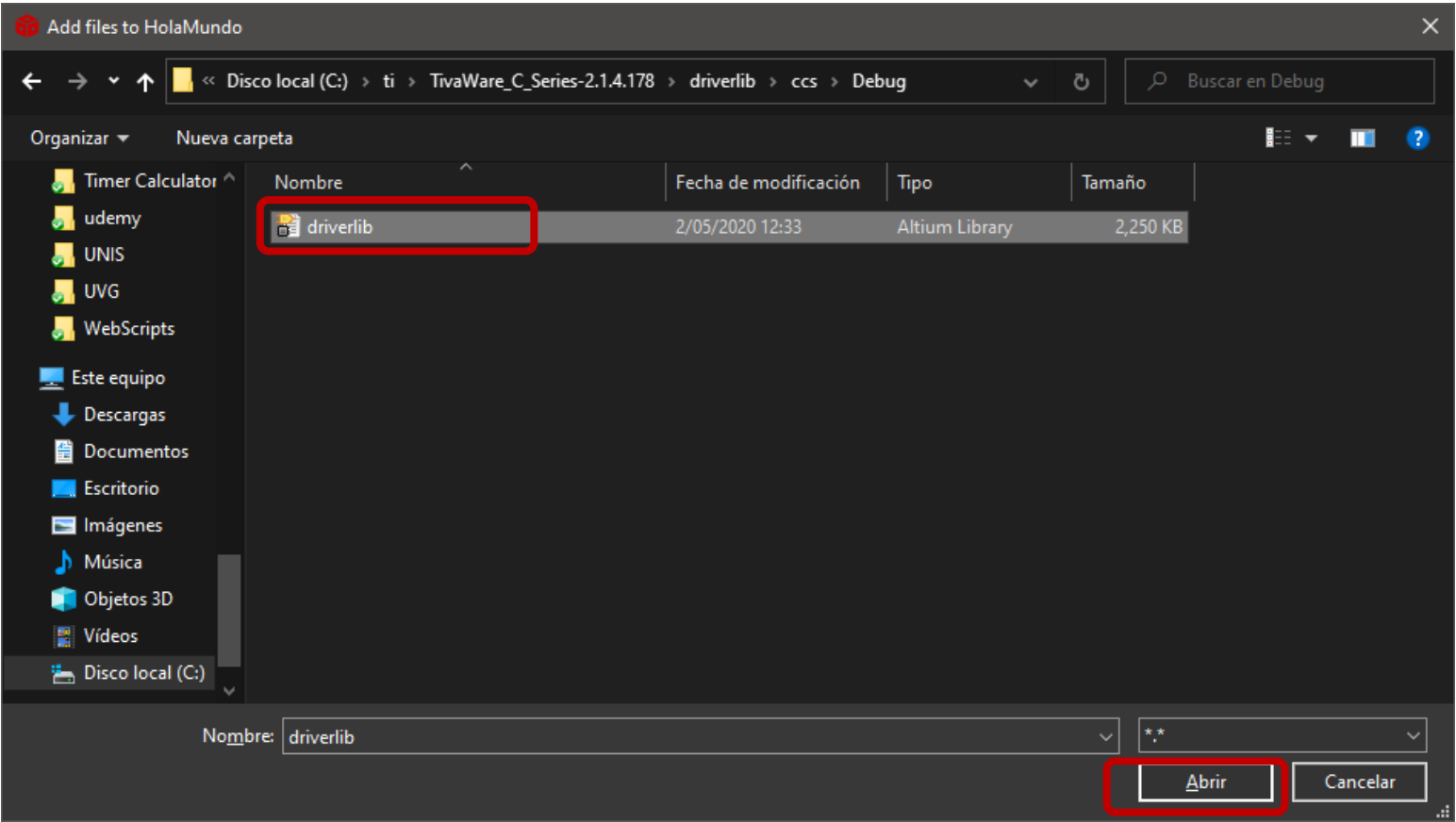




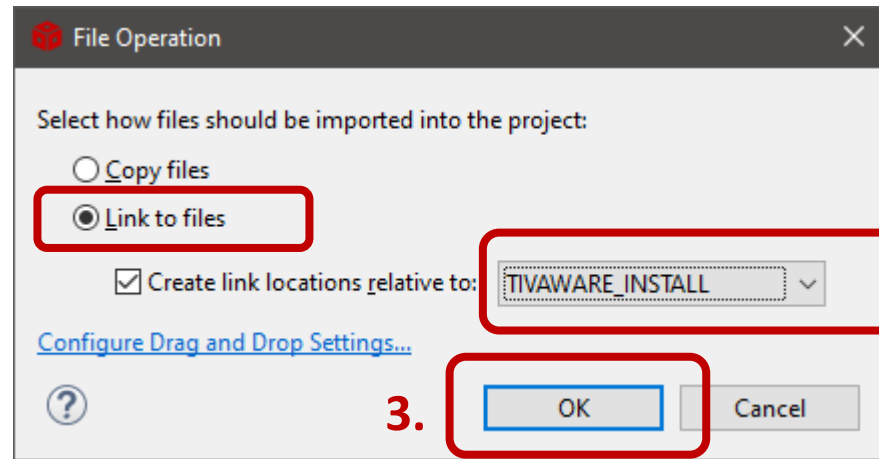
Click derecho sobre el Proyecto y
seleccionar *Add Files...*



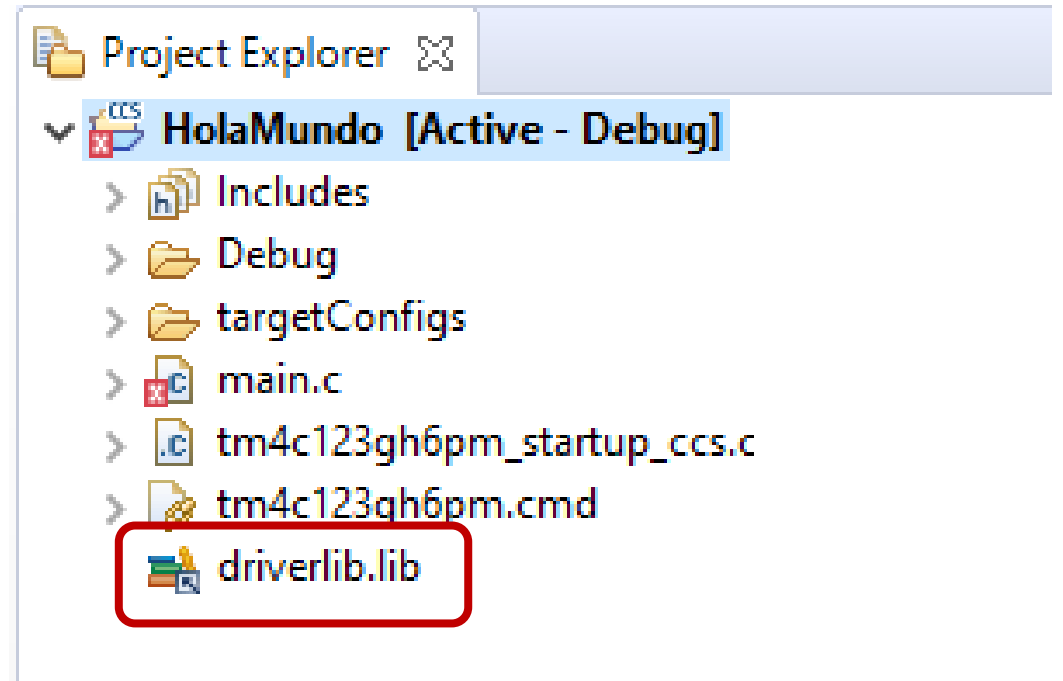
Buscamos en el siguiente directorio el archivo “driver.lib”
C:\ti\TivaWare_C_Series-2.1.4.178\driverlib\ccs\Debug



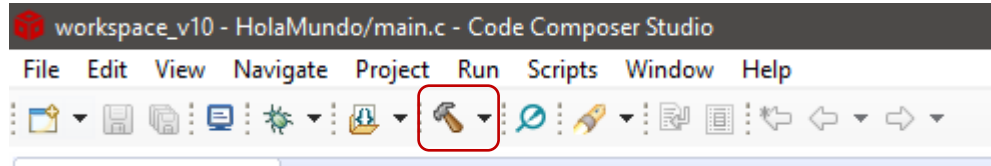
Nos aparecerá la ventana siguiente



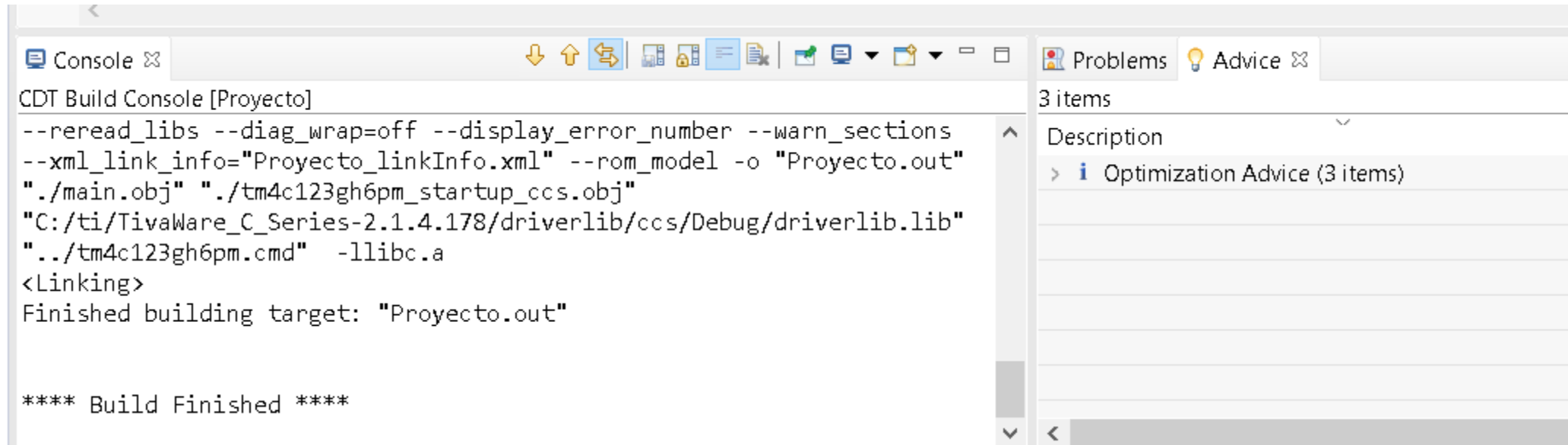
Nos fijamos que tengamos la librería en nuestro proyecto



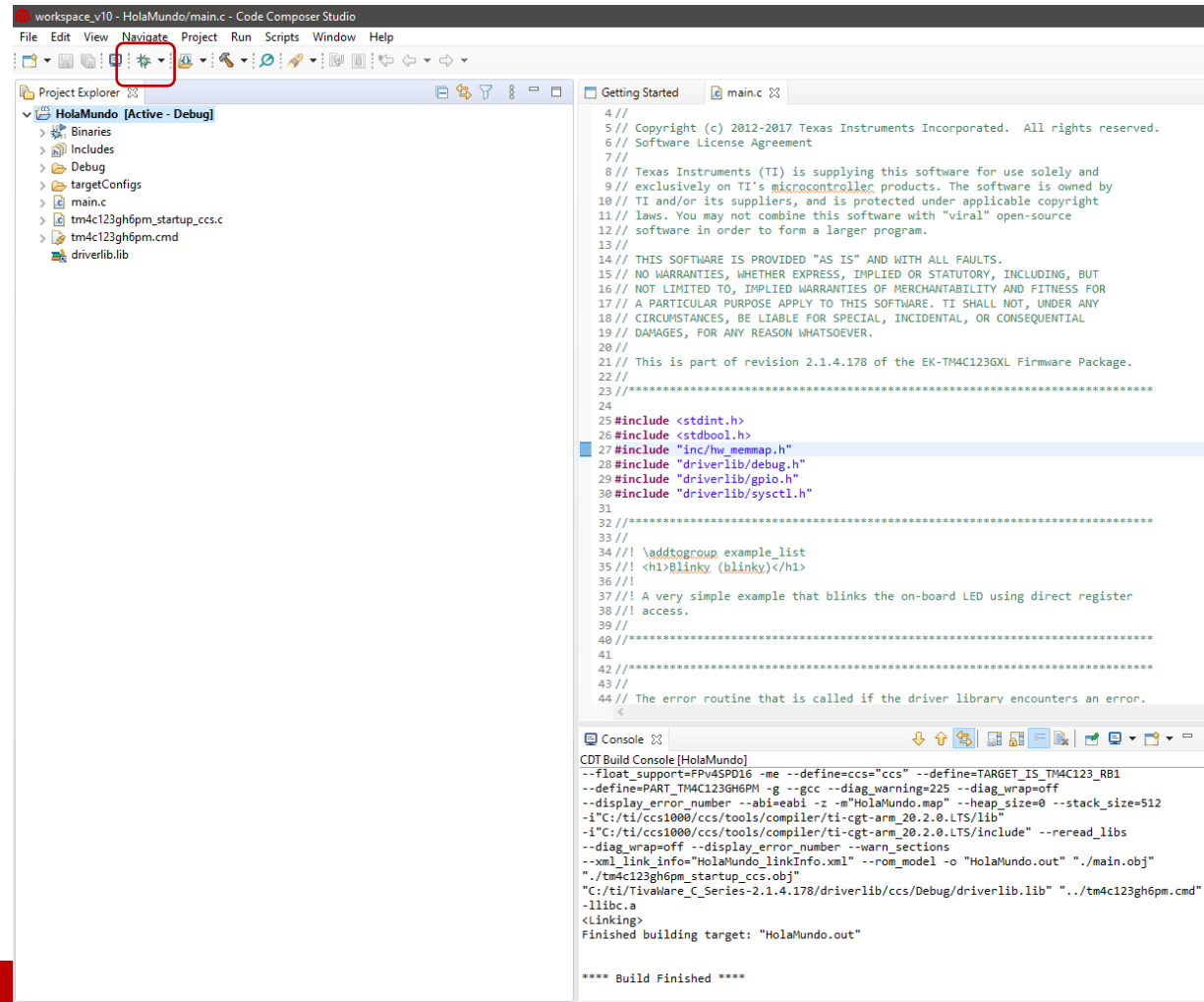
Listo para compilar



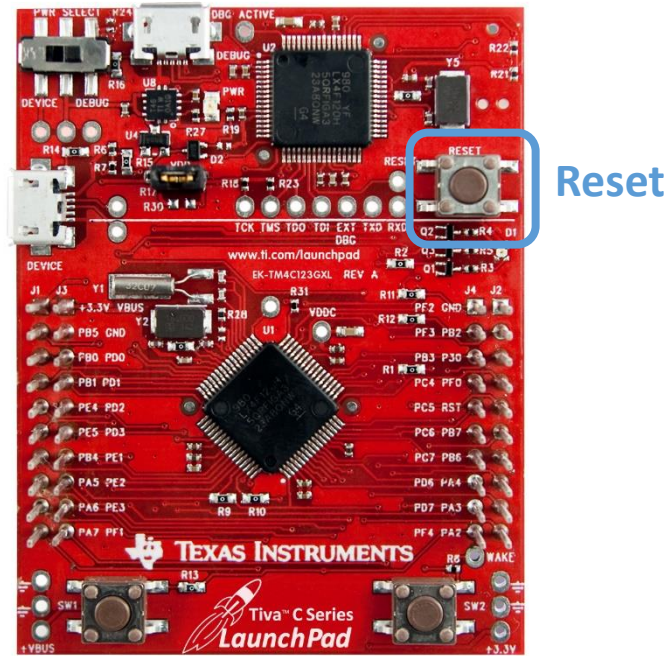
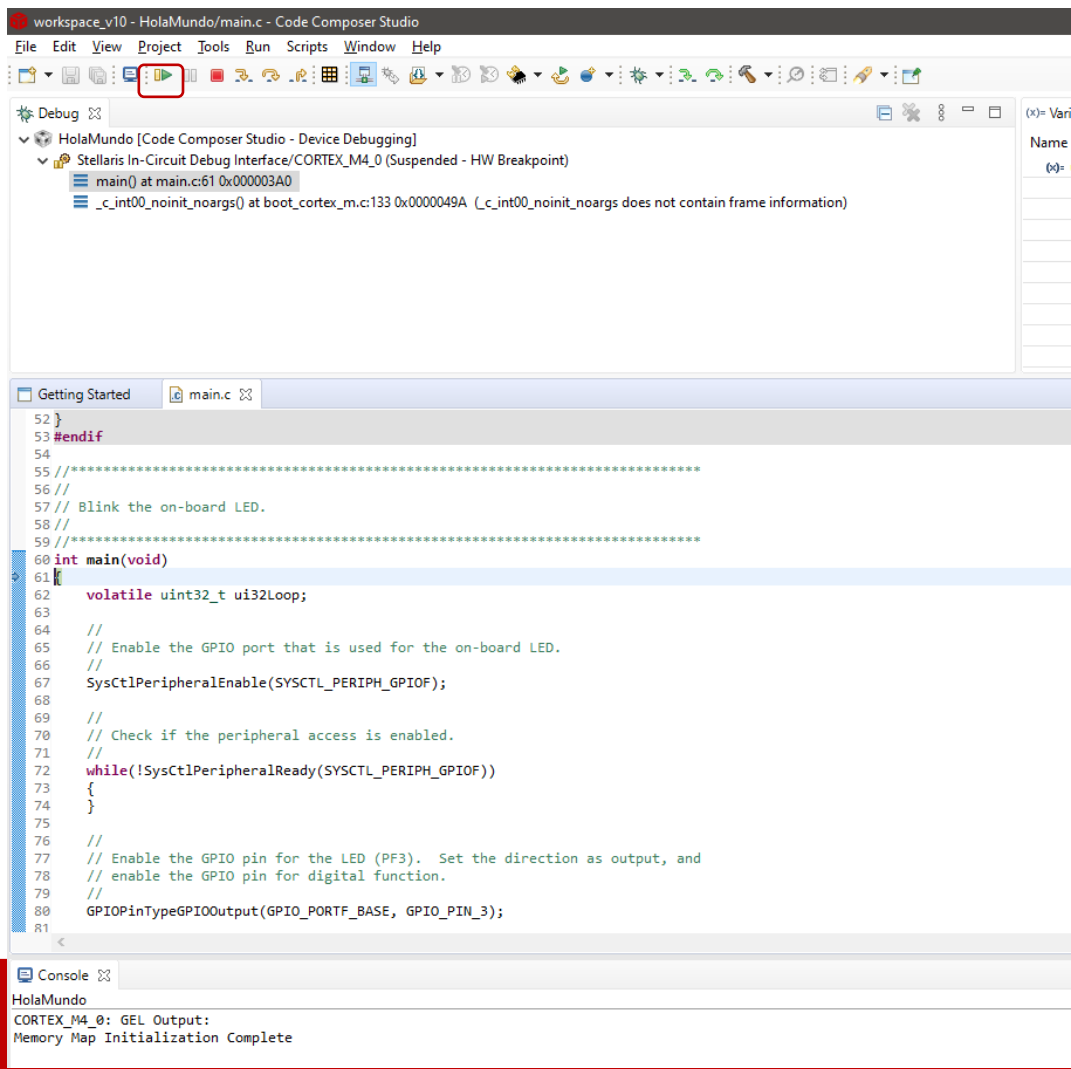
Cero Errores



Para cargar el programa



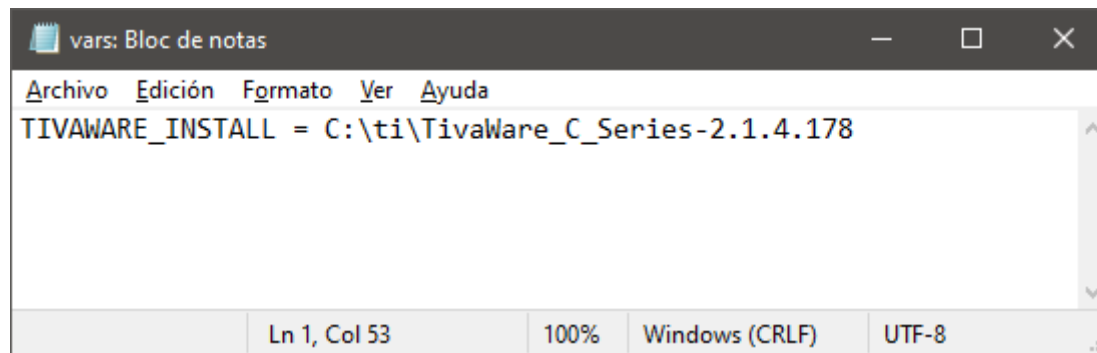
Ya que está subido nuestro programa, podremos correrlo de dos formas, la primera es con el botón de play en las herramientas de Debug, la siguiente forma es solo presionar el botón de Reset, y automáticamente empezará a correr el programa.



Ahora bien, este proceso lo tendríamos que repetir cada vez que realicemos un nuevo proyecto, por lo que se les sugiere realizar lo siguiente para que las variables de la ruta donde se ubica las librerías de TivaWare este configurado para todo el workspace.

Abra el bloc de notas y guarde el documento como **vars.ini** y pegue lo siguiente:

TIVAWARE_INSTALL = C:\ti\TivaWare_C_Series-2.1.4.178



Luego copiar este documento en el directorio del workspace

C:\Users\Pablo\workspace_v10

Importaremos el archivo creado, para esto nos vamos al menú *File > import*

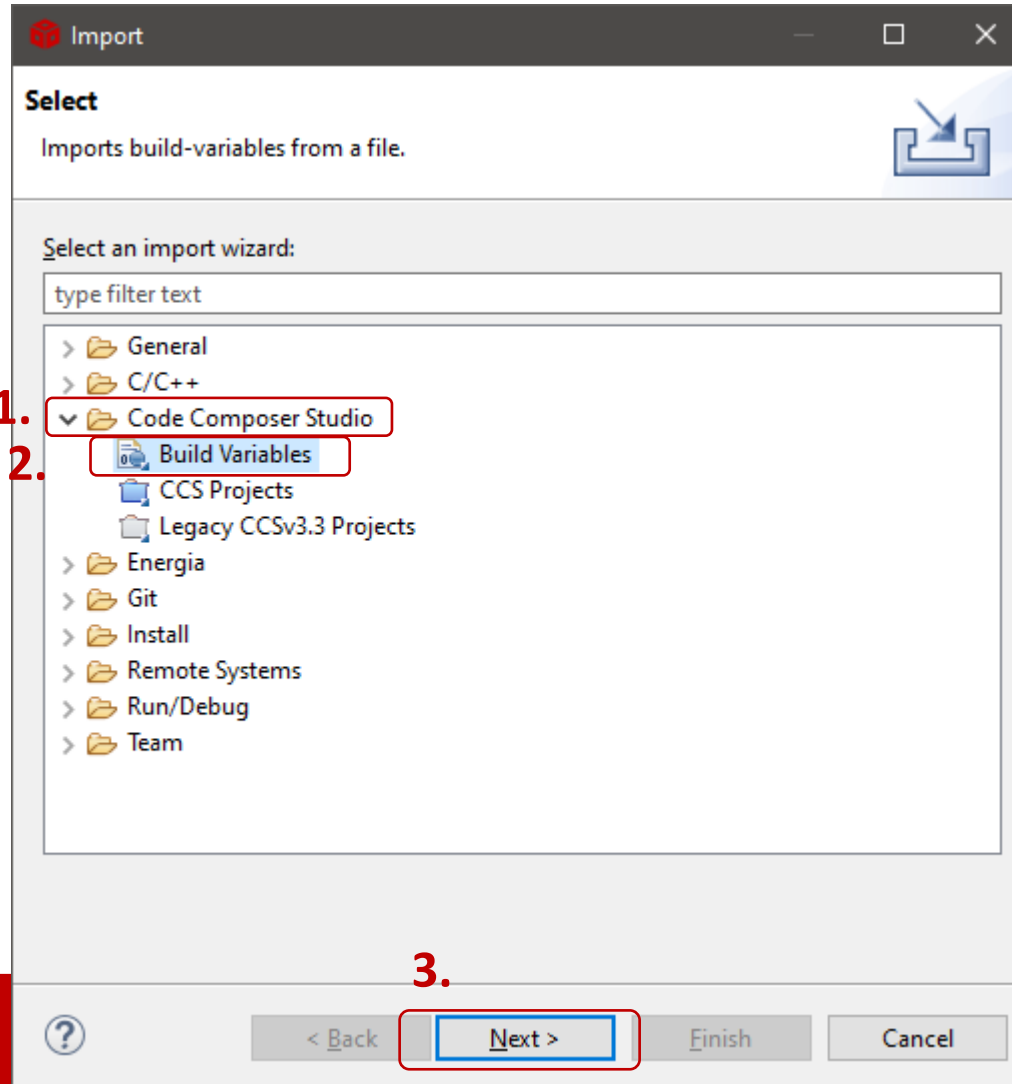
Nos aparecerá la siguiente ventana

Expandimos *Code Composer Studio* 1.

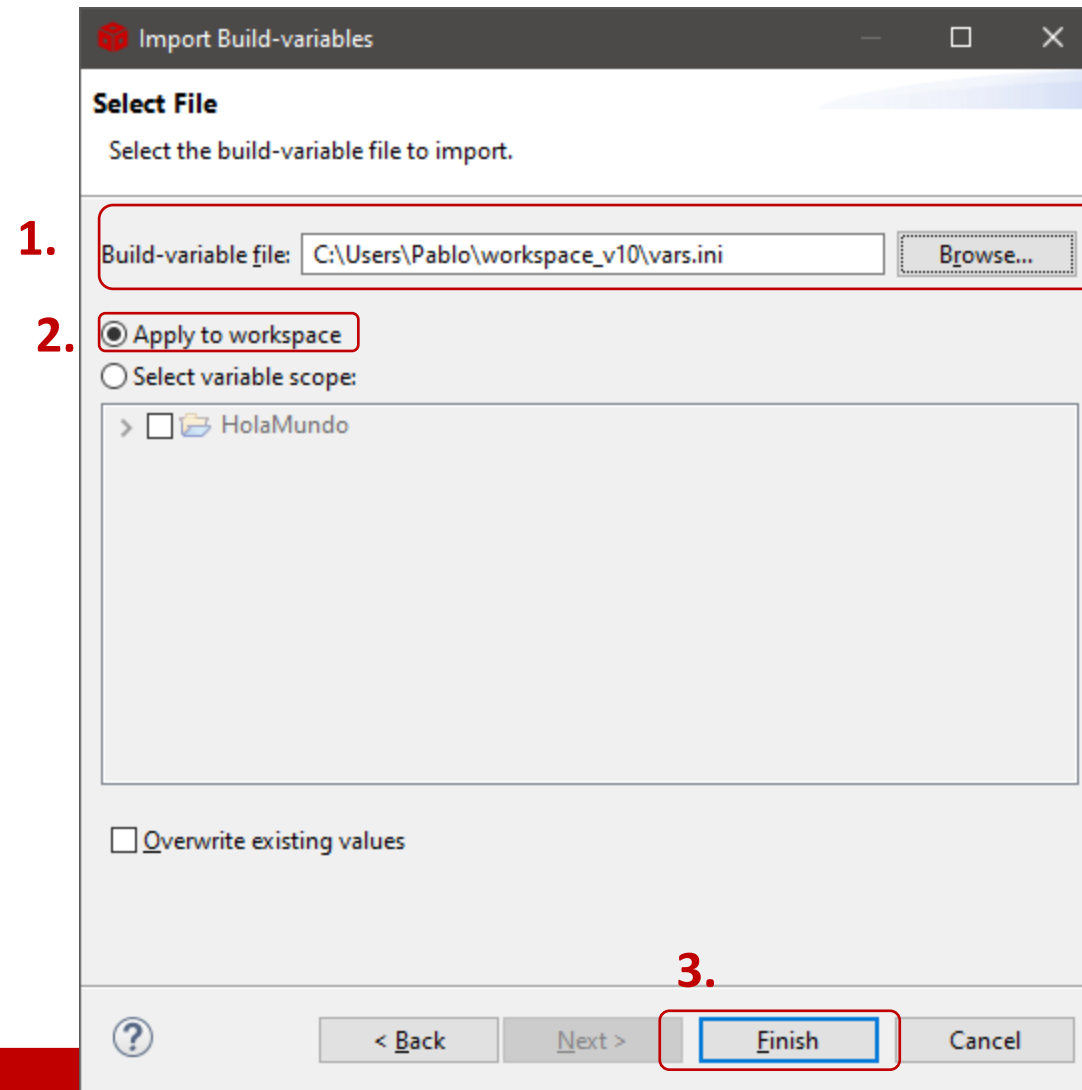
2.

Seleccionamos *Build Variables*

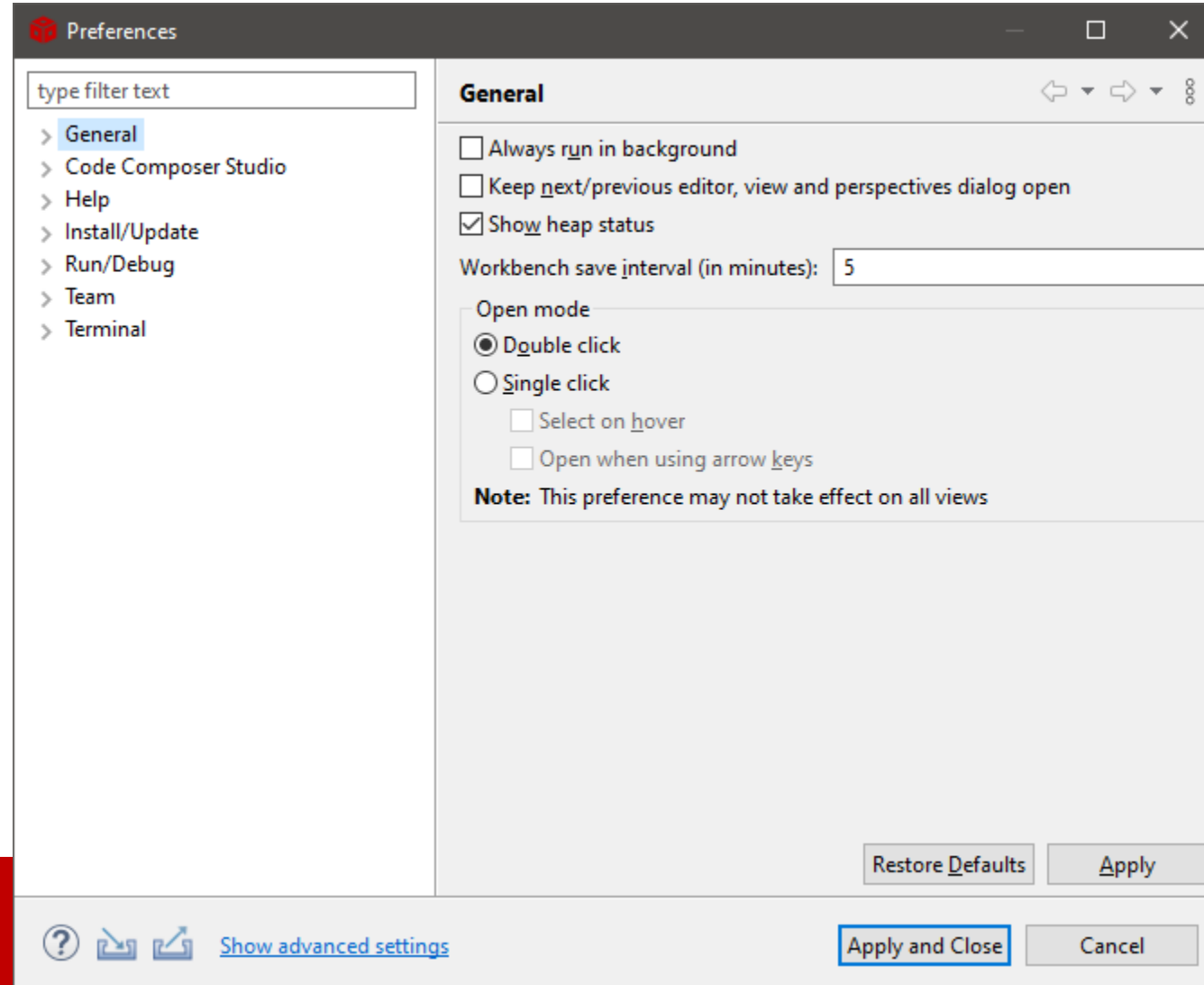
3.



Buscar el archivo *vars.ini* en el directorio donde lo guardamos

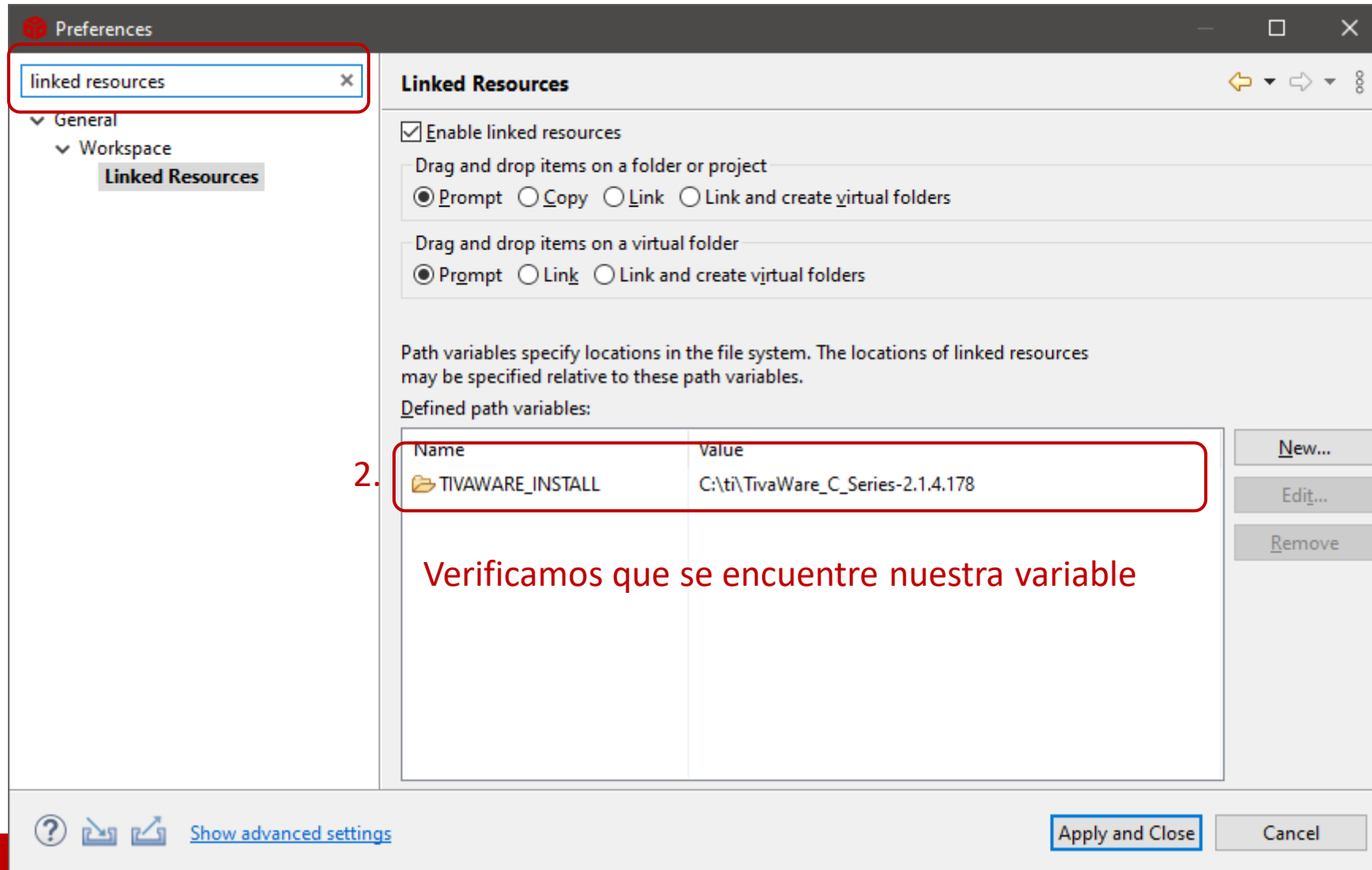


Comprobaremos que se hayan cargado ahora en las variables del sistema
Nos iremos a *Windows > Preferences*



Escribimos en el *type filter text* lo siguiente: *linked resources*

1.



Luego escribimos en el *type filter text* lo siguiente: *Variables*

1. Variables

3. Verificamos que se encuentre nuestra variable

2. ☒ Show system variables

Habilitamos las variables del sistema

4. Apply and Close

Name	Type	Value
target_config_default	String	<ECLIPSE DYNAMIC VARIABLE>
TEMP	String	C:\Users\Pablo\AppData\Local\Temp
TIVAWARE_INSTALL	Path	C:/ti/TivaWare_C_Series-2.1.4.178
TMP	String	C:\Users\Pablo\AppData\Local\Temp
USERDOMAIN	String	DESKTOP-18USO58
USERDOMAIN_ROAMINGPRO...	String	DESKTOP-18USO58
USERNAME	String	Pablo
USERPROFILE	String	C:\Users\Pablo
VXIPNPPATH	String	C:\Program Files (x86)\IVI Foundation\V
VXIPNPPATH64	String	C:\Program Files\IVI Foundation\VISA\
windir	String	C:\Windows
workspace_loc	String	<ECLIPSE DYNAMIC VARIABLE>
WorkspaceDirPath	Directory	C:\Users\Pablo\workspace_v10
xdc_find	String	<ECLIPSE DYNAMIC VARIABLE>
xdc_var	String	<ECLIPSE DYNAMIC VARIABLE>
XDCPATH	String	<ECLIPSE DYNAMIC VARIABLE>

Ahora ya está listo nuestro workspace, para crear cualquier proyecto, lo único que deberíamos hacer para que todo funcione es importar el driverlib a nuestro proyecto y listo funcionará correctamente.

Atención: Si cambiamos la ubicación del workspace, habrá que volver a importar el archivo vars.ini al nuevo workspace.