

CC3200 Tools Setup

Introduction

There are two main sections to this lab:

1. Pre-work to be completed prior to the seminar.
2. Final lab steps to install the CC3200 LaunchPad driver.

The pre-work includes downloading and installing several software packages from the Texas Instruments website. It also includes the steps to import and build some Code Composer Studio projects that are needed for the CC3200 software examples in the Software Development Kit (SDK).

The final steps of the lab require you to plug in a CC3200 LaunchPad board. Since you will receive this board at the seminar, this section of the lab will be performed at the seminar.

Timing

The pre-work for this lab should take from 45-60 minutes to complete, depending on the speed of your internet connection. The final steps at the workshop should take only 5-10 minutes, once you receive your CC3200 LaunchPad board.

Prerequisites

To run these labs you will need a Microsoft® Windows® 7 laptop with a good internet connection.

Optional: Android or iOS smartphone to install SimpleLink Wi-Fi Starter application

Chapter Topics

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CC3200 Software Development Kit (SDK)

1. Download the CC3200 SDK version 0.5.2. The seminar labs are built with the version of the SDK. There may be later versions available, but this is the version you will need for the seminar.

▶ Go to:

http://software-dl.ti.com/dsps/forms/self_cert_export.html?prod_no=CC3200SDK-0.5.2-windows-installer.exe&ref_url=http://software-dl.ti.com/ecs/cc31xx/sdk/cc3200_sdk_v0_5_2

▶ You must fill in the U.S. Government export approval fields to download this software. This will be the same procedure for several of the software packages you will need.

2. Install the CC3200 SDK

▶ Run the installer and choose the default installation folder `c:\ti\CC3200SDK`

Note: ▶ If you already have the CC3200 SDK installed, this installer will over-write your current installation. If you have made any edits/additions to the SDK files, you should re-name your current installation folder.



SimpleLink Wi-Fi Starter Application

If you have an Android or iOS device, download and install the “SimpleLink Wi-Fi Starter Application” from the App Store or Google Play. This application allows you to configure the CC3200s Wi-Fi network information for the first time, using Smart Config (the first tab). A second tab shows you a list of devices that are connected to the Wi-Fi network. A third tab lets you set options to show or hide device information.

3. Download and install the application to your Android or iOS Device

- ▶ Using your Android or iOS device browser, go to <http://www.ti.com/tool/wifistarter> and click on the appropriate download link (App Store or Google Play)

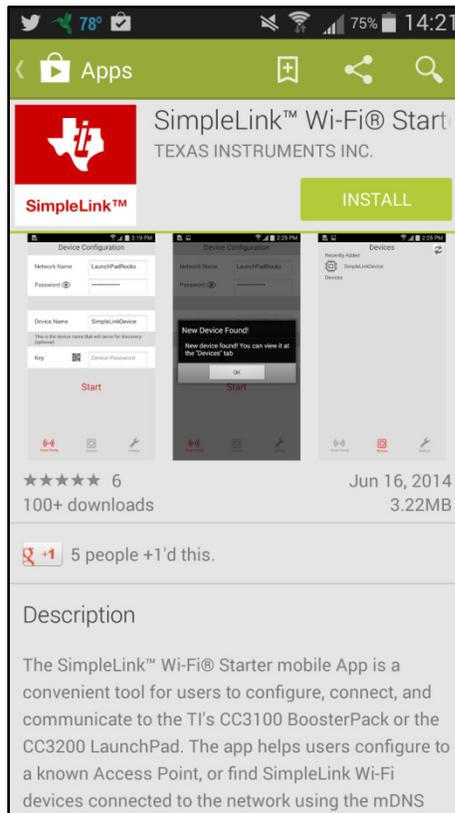
Part Number	Buy from Texas Instruments or Third Party	Alert Me	Status	Current Version	Version Date
WIFISTARTER-ANDROID: SimpleLink Wi-Fi Starter for Android	Not Available	Alert Me	ACTIVE	1.0	16-JUN-2014
WIFISTARTER-ANDROID-SOURCE: SimpleLink Wi-Fi Starter for Android Source Code	Download	Alert Me	ACTIVE	1.0	08-JUL-2014
WIFISTARTER-IOS: SimpleLink Wi-Fi Starter for iOS	Not Available	Alert Me	ACTIVE	1.0	03-JUL-2014
WIFISTARTER-IOS-SOURCE: SimpleLink Wi-Fi Starter for iOS Source Code	Download	Alert Me	ACTIVE	1.0	08-JUL-2014

Description

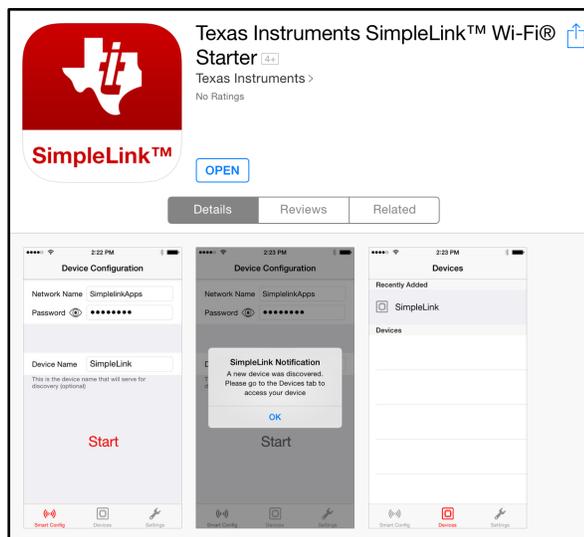
[Download on the App Store](#) [ANDROID APP ON Google play](#)

Note that you can also download the source code for either application from this page but you won't need that for the seminar.

- For the Android app you will see this. Click on the INSTALL button to install.



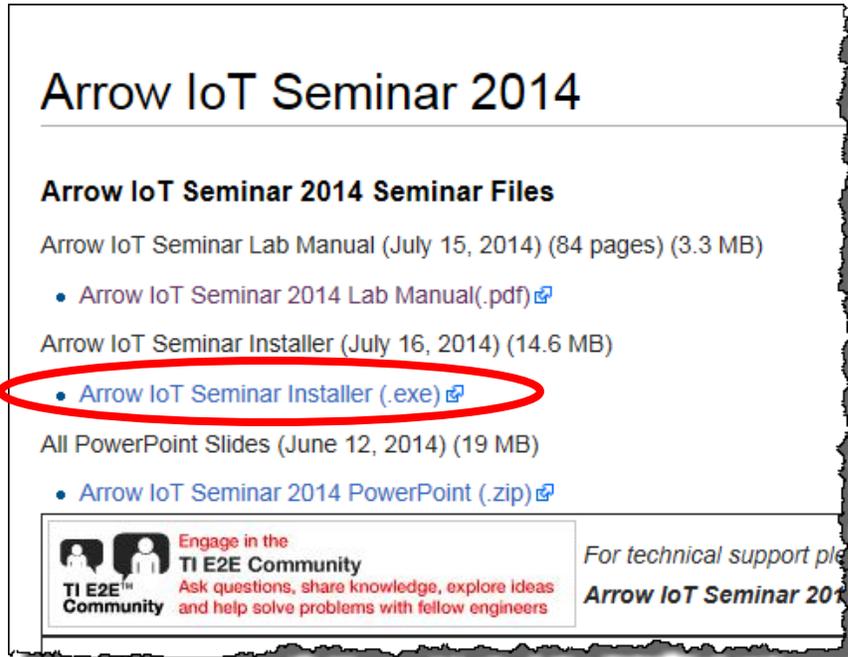
- For the iOS app you will see this. Click on the INSTALL button to install. Note: In this screenshot, the app was already installed, so you see the OPEN button instead.



Install Arrow IoT Seminar Files

4. Download the Arrow IoT Seminar Installer

► Go to [http://processors.wiki.ti.com/index.php/Arrow IoT Seminar 2014](http://processors.wiki.ti.com/index.php/Arrow_IoT_Seminar_2014) and click on the Arrow IoT Seminar Installer download link.



Arrow IoT Seminar 2014

Arrow IoT Seminar 2014 Seminar Files

Arrow IoT Seminar Lab Manual (July 15, 2014) (84 pages) (3.3 MB)

- [Arrow IoT Seminar 2014 Lab Manual\(.pdf\)](#)

Arrow IoT Seminar Installer (July 16, 2014) (14.6 MB)

- [Arrow IoT Seminar Installer \(.exe\)](#)

All PowerPoint Slides (June 12, 2014) (19 MB)

- [Arrow IoT Seminar 2014 PowerPoint \(.zip\)](#)

 Engage in the
TI E2E Community
Ask questions, share knowledge, explore ideas
and help solve problems with fellow engineers

For technical support please visit
Arrow IoT Seminar 2014

5. Run the Arrow IoT Seminar Installer

► Run the installer and choose the default installation folder `c:\Arrow_IoT_Seminar`

This will install the project files we'll use in the seminar, along with some documentation files.

Install Code Composer Studio (CCS)

6. Download Code Composer Studio (CCS) version 6.0.1.00040 or later

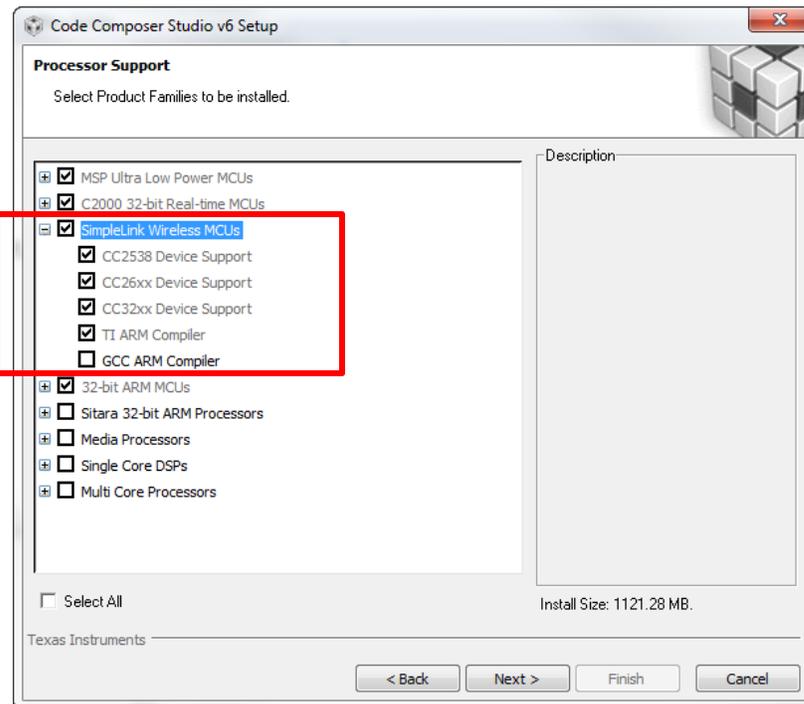
► Go to http://processors.wiki.ti.com/index.php/Category:Code_Compiler_Studio_v6 and click on the Windows Download link.

7. Install CCS

► Run the installer program and when prompted for Processor Support, select “**SimpleLink Wireless MCUs**”. For the remaining options, select the default values. You should also temporarily turn off your anti-virus software for this installation. The installation time is typically 20 minutes, but can vary based on internet connection speed. If you are using additional processors you can install those as well.

NOTE:

This is the only processor support used in the seminar, although you can choose others if you need them. You can also install other processors later if needed.



Hint: If you previously installed CCS version 6.0.1.00040 (or later) and you do NOT yet have SimpleLink Wireless MCUs support installed, you have two choices:

1. We recommend that you re-install CCS. You can just delete or rename the `c:\ti\ccsv6` folder, and then re-install CCS with the processor support you need, including the Wireless Connectivity MCUs. This has the advantage of giving you a clean installation, and might be more reliable than the next option.
2. You can keep your current installation, and just install the Wireless Connectivity MCU support on top of your existing CCS. With CCS v6, this seems to work in most cases. You can't remove existing installed processor support very easily, but it is possible to add new support. Simply run the installer and check the box for Wireless Connectivity MCUs.

Note: The link we showed in the previous step is for the “online” installer. If you have any problems installing using this link, you can try downloading a zip file of the full “Off-line” installer from:
http://processors.wiki.ti.com/index.php/Download_CCS#Code_Compiler_Studio_Version_6_Downloads.

Code Composer Studio Version 6 Downloads

There are two types of installers:

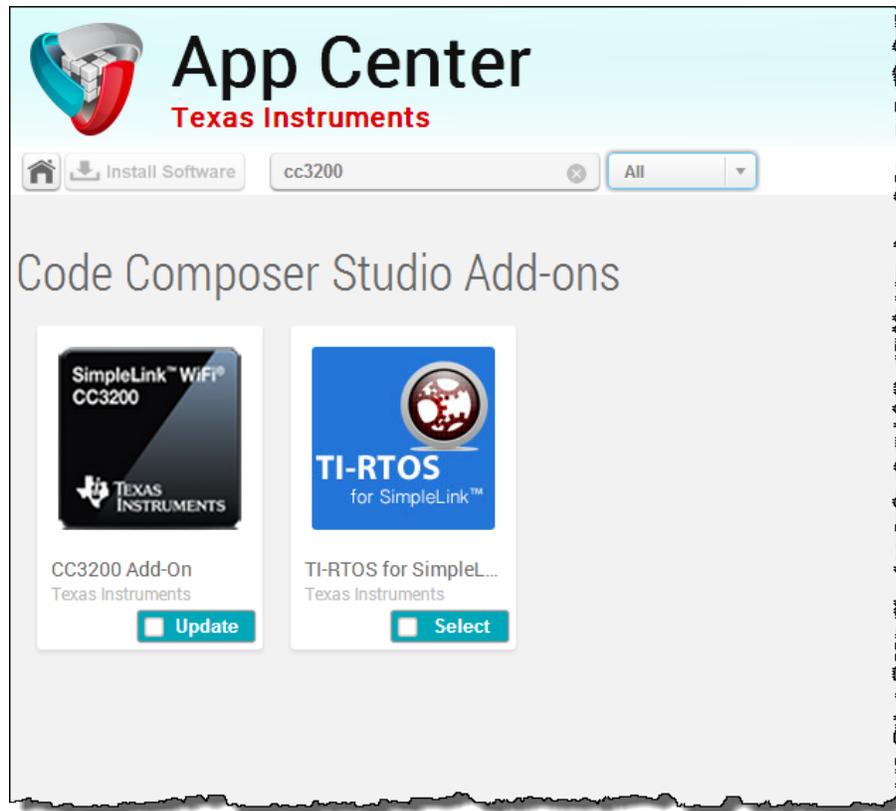
- **Web installers** will allow you to perform an install using an installer controlled download process that will only download needed software components. An internet connection is mandatory at install time.
- **Off-line installers** are a large archive (about 730MB). When you run it you can select the components to be installed. No internet connection is required at install time. The executable can be used for installing multiple local systems.

If you have an issue with the web installer not being able to connect to the internet then please try the off-line installer. If you need to update a computer that does not have internet access then download the offline installer and then transfer it to the computer without access and use the offline installer to update your installation.

Release	Build #	Date	Download	Notes
6.0.1	6.0.1.00040	Aug 3, 2014	Web Installers: Windows Linux Off-line Installers: Windows MD5 Linux MD5	<ul style="list-style-type: none">• New in this release:<ul style="list-style-type: none">• Fixes an installation issue for laptops using NVidia Optimus-based graphics content changes.• Installation: see instructions in README file. Additional Linux Installation Instructions• The software manifest lists the software components included in this product.• If you wish to update a previous install then please install the update from within CCS downloading this installation and pointing it to your existing install.
6.0.1	6.0.1.00039	July 22, 2014	Web Installers: Windows Linux Off-line Installers:	<ul style="list-style-type: none">• New in this release:<ul style="list-style-type: none">• Support for Hercules RM57L and TMS570LC (Cortex-R4)• Support for SimpleLink CC32xx.• New MSP430 EnergyTrace tool for profiling application's energy consumption, n device states and determining execution hotspots (statistical function profile)

Should you decide to download this zip file, you should un-zip the file to a folder before running the installer.

8. **Install CC3200 Add-on Update and TI-RTOS for SimpleLink add-on from the CCS App Center:**
 - ▶ Start CCS, and choose a Workspace folder (choose the default folder).
 - ▶ Open the App Center from the *Help->Getting Started* screen.
 - ▶ Search 'cc3200' in the App Center to find 'CC3200 Add-On and 'TI-RTOS for SimpleLink'
 - ▶ Select the update box for CC3200 Add-On and select the box for TI-RTOS for SimpleLink
 - ▶ Press 'Install Software'



- ▶ Restart CCS when directed after installation

Import and Build Four Essential CCS Projects

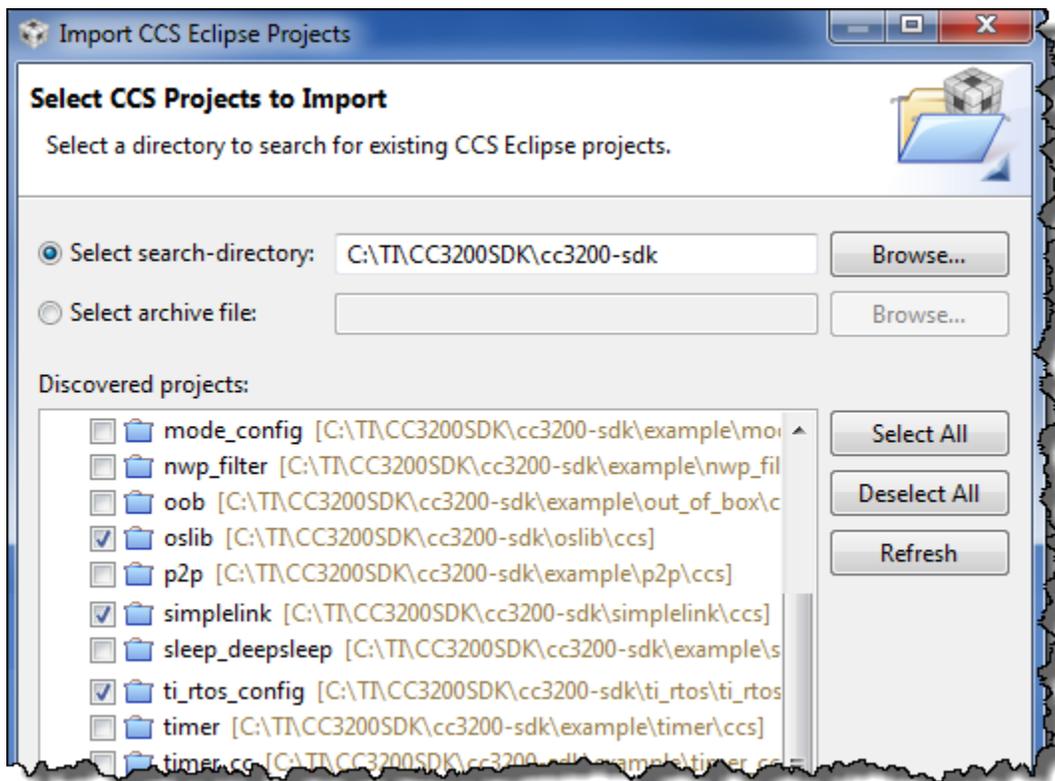
The CC3200 SDK contains four projects that you need to import and build:

- simplelink – creates an object library for SimpleLink APIs
- driverlib – creates an object library for CC3200 peripheral drivers
- oslib – creates the OS adaptation layer library
- ti_rtos_config – contains a common TI-RTOS configuration file

It is necessary to build these projects since the libraries and shared TI-RTOS configuration file are used by the CC3200 SDK example projects.

9. Import the four projects

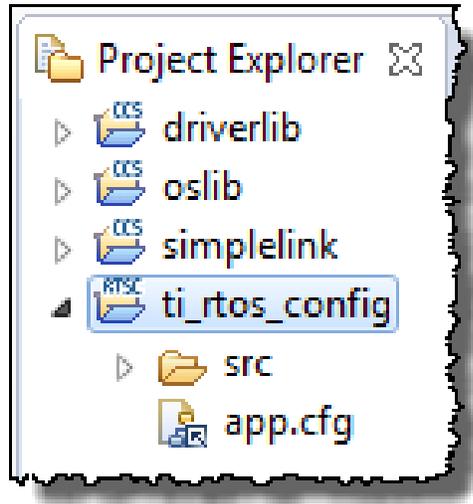
- ▶ Choose *Projects>Import CCS Projects* from the Project menu.
- ▶ Select the Browse button in the *Import CCS Eclipse Projects* dialog, and select the directory `c:\ti\CC3200SDK\cc3200-sdk`.
- ▶ Select the four projects by clicking the checkbox for the **driverlib**, **oslib**, **simplelink**, and **ti_rtos_config** projects.



Note: ▶ Do **NOT** select “Copy projects into workspace” option or “Automatically import referenced projects found in same search-directory”.

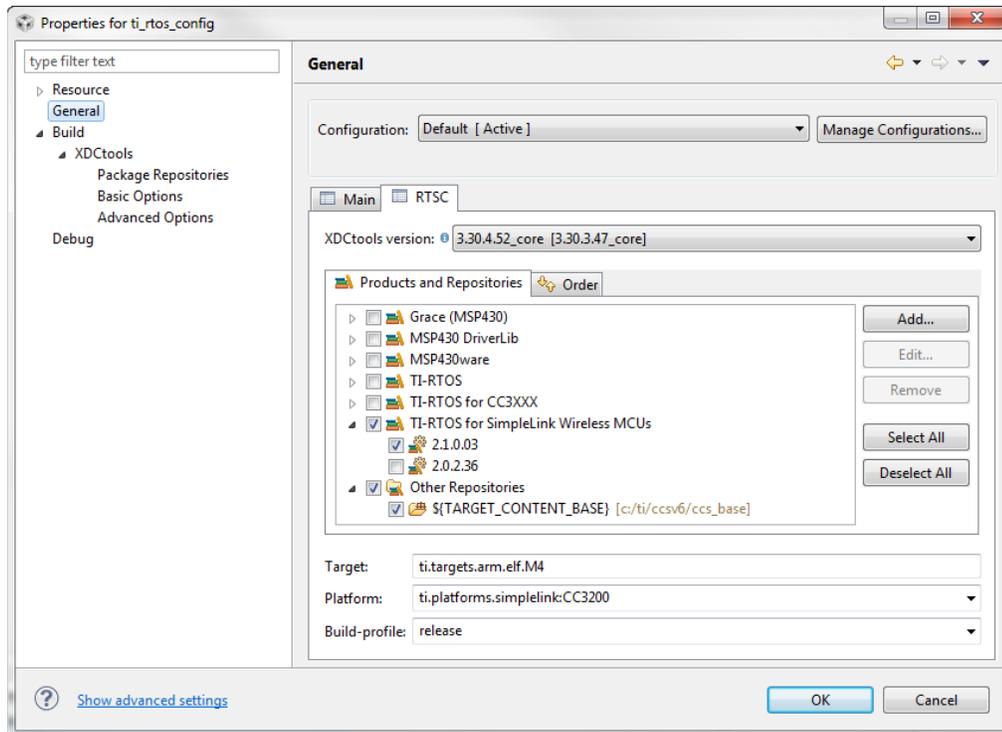
- ▶ After selecting all four projects, click “Finish”.

In the CCS Project Explorer, you should see your four projects listed: **driverlib**, **oslib**, **simplelink**, and **ti_rtos_config**.



10. Set up the **ti_rtos_config** project configuration as shown.

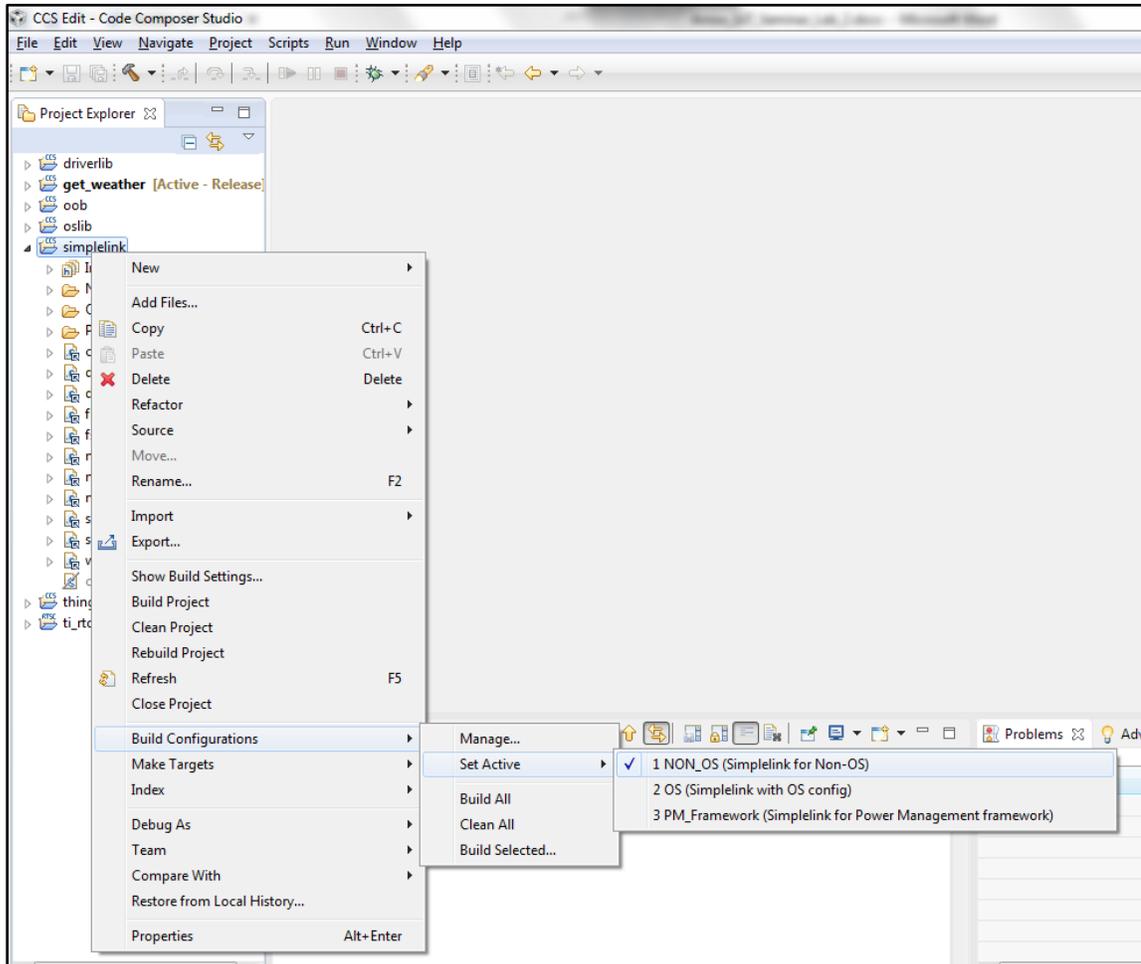
- ▶ Right-click the **ti_rtos_config** project name, and select “Properties” from the menu.
- ▶ Click the “General” property in the left column. Click the RTSC tab, and select the latest versions of XDCtools and TI-RTOS for SimpleLink. Also verify the platform is selected as ti.platforms.simplelink:CC3200. Finally, click OK.



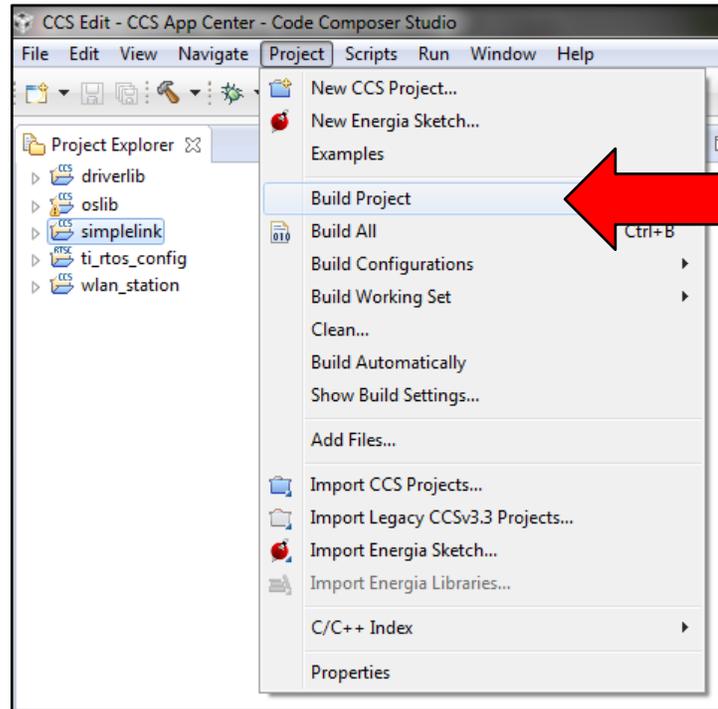
11. Build the *simplelink* project for two Build Configurations: NON_OS and OS

- ▶ Right-click the *simplelink* project, choose Build Configurations, Set Active, and choose:
1 NON_OS (Simplelink for Non-OS).

This selects the NON_OS configuration to build.



- ▶ Select the **simplelink** project and build using the menu command **Project → Build Project**. This builds the NON_OS configuration.



- ▶ Right-click the **simplelink** project again and choose Build Configurations, Set Active, and choose:

2 OS (Simplelink with OS config).

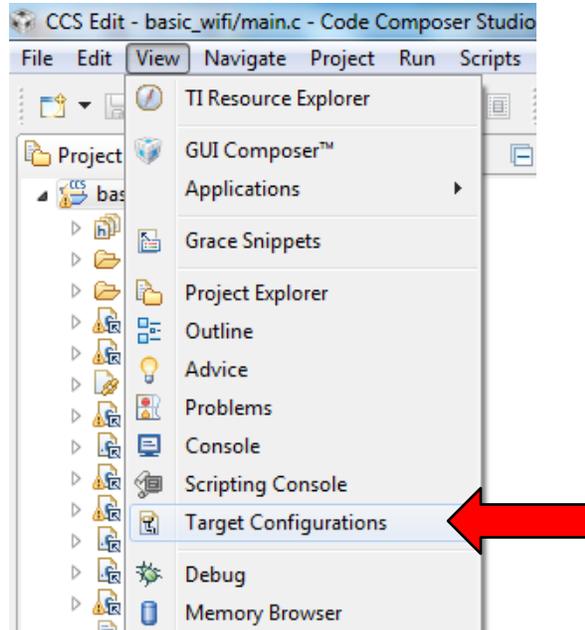
This selects the OS configuration to be active

- ▶ Select the **simplelink** project and build this OS configuration
- ▶ Select the **ti_rtos_config** project and build it.
- ▶ Select the **driverlib** project and build it.
- ▶ Select the **oslib** project and build it for two Build Configurations: **free_rtos** and **ti_rtos**. Note that you may receive two warnings when you build the free_rtos configuration. You can ignore these warnings.

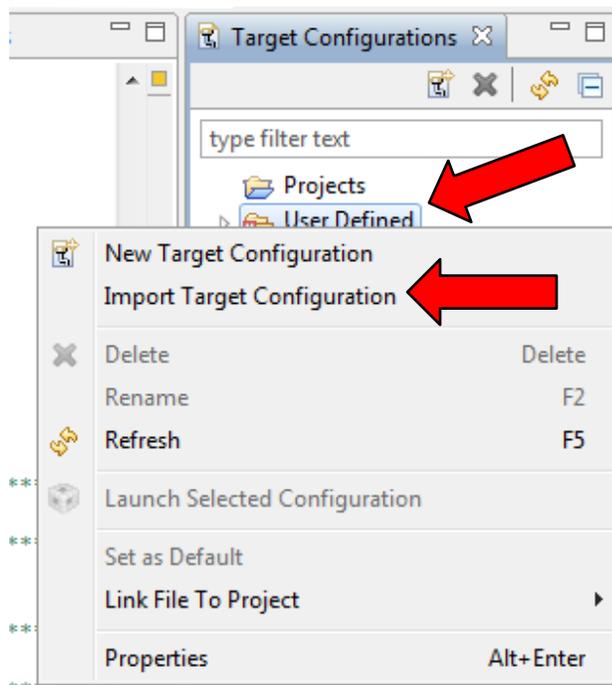
Set the Default Target Configuration

12. The target configuration needs to be set before debugging from CCS.

- ▶ Navigate to **View** → **Target Configurations**.

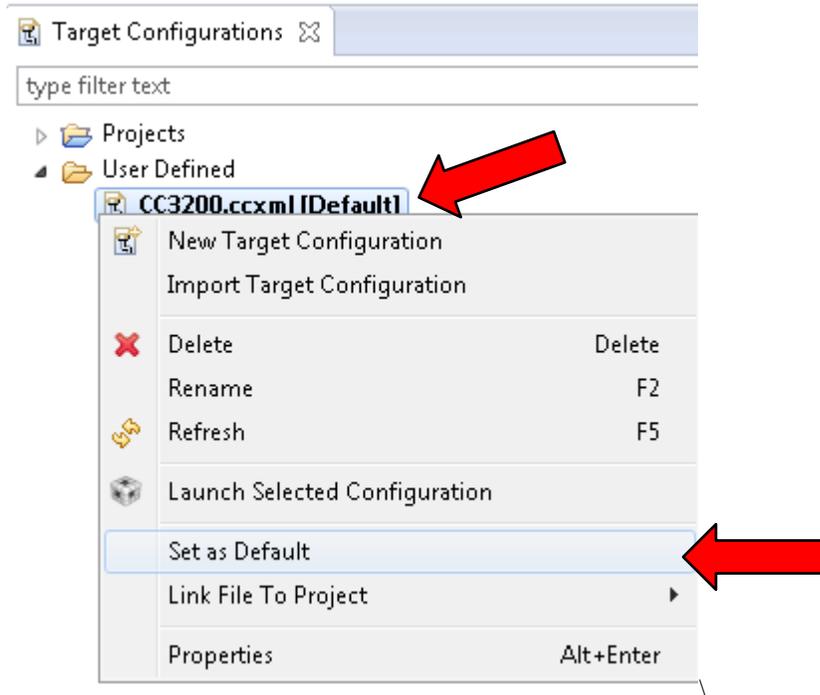


- ▶ Right-Click on “User Defined,” select “Import Target Configuration” and navigate to the folder `c:\ti\CC3200SDK\cc3200-sdk\tools\ccs_patch` and select the file `CC3200.ccxml`



- ▶ Select the Copy files option when prompted.

- ▶ Set this new configuration as the default by right clicking on the file name as shown, and then select “Set as Default”



This is the end of the seminar pre-work. At the seminar you will receive a CC3200 LaunchPad board which is required for the remaining lab steps. If you already have a LaunchPad board, you can proceed with the remaining steps.

Configure the CC3200 LaunchPad Board

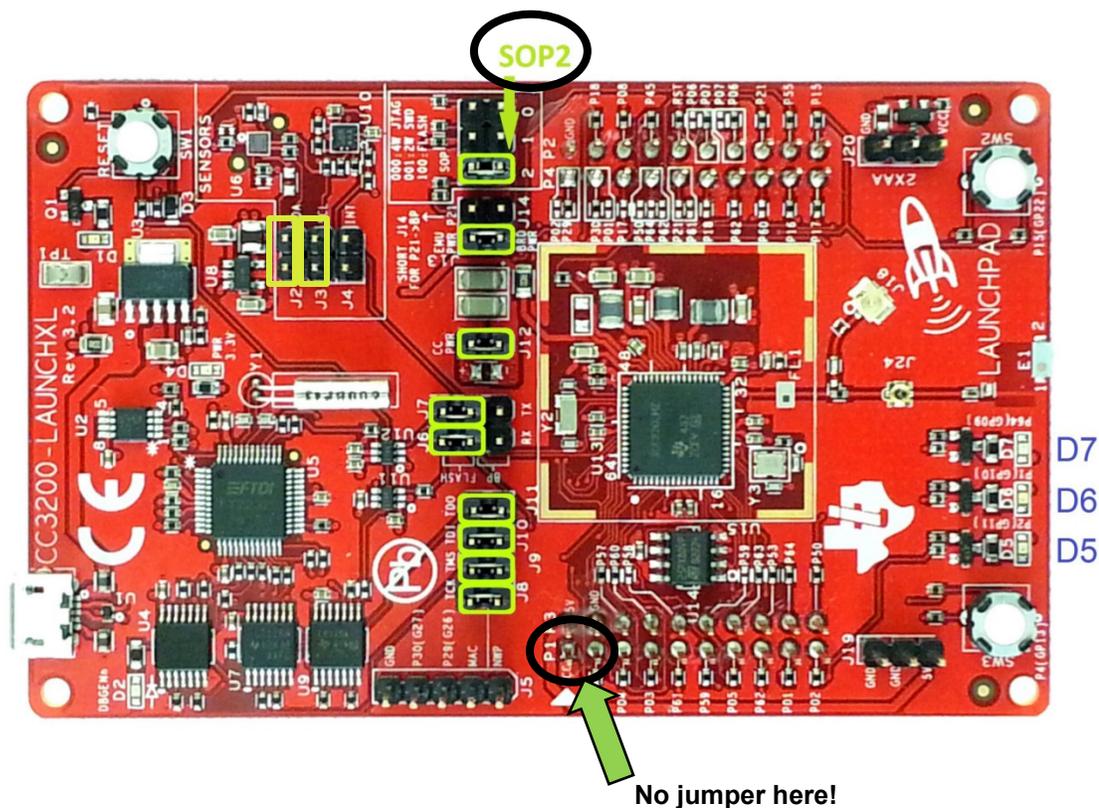
This part of the lab will be done at the seminar you are attending. It requires that you have a CC3200 LaunchPad board. So if you're just doing the pre-work steps, you're done at this point. If you already have your own LaunchPad board, you can go ahead and perform these steps as well.

Check CC3200 LaunchPad Jumpers

13. The jumpers on the CC3200-LAUNCHXL should be connected as shown.

- ▶ Make sure there is NO jumper on P58-VCC
- ▶ Make sure the SOP2 jumper has been installed

The jumper on SOP2 (sense on power) is used when debugging CCS projects. This allows downloading code to the CC3200 RAM, and inhibits the CC3200 from automatically boot-loading the application image that is stored in serial flash. This jumper is also used whenever you want to program the serial flash with a new application image, file, digital certificate, or CC3200 service pack. If this jumper is removed, the stored application image is bootloaded from serial flash. On a new board, a pre-programmed "out-of-box" example is loaded and run.



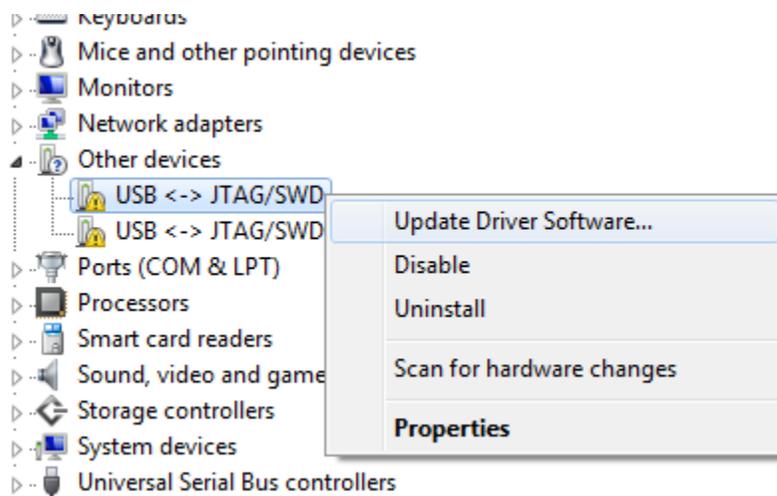
Install USB Driver

14. The USB drivers may need to be installed manually after connecting your LaunchPad board.

- ▶ Connect the CC3200-LAUNCHXL to the PC using the provided micro-USB cable.
- ▶ Open the Windows Device Manager by selecting **Start Menu**→**Control Panel**→**Device Manager**.

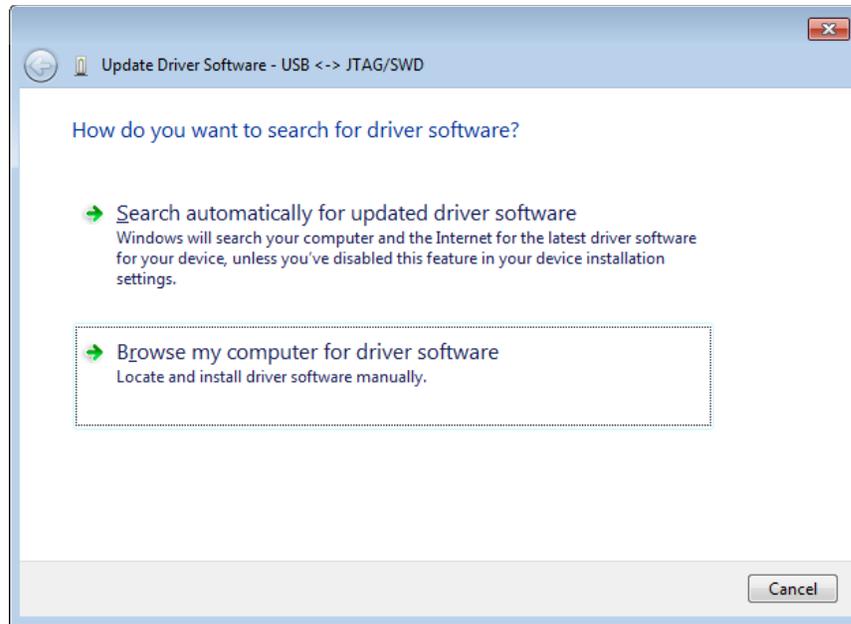
If you see two devices in the “Other devices” category named USB <-> JTAG/SWD, you will need to install the driver software for both instances.

If you DON'T see these devices in “Other devices”, check the Ports category to see if the CC3200LP already shows up there. If already installed you can skip the remaining steps.

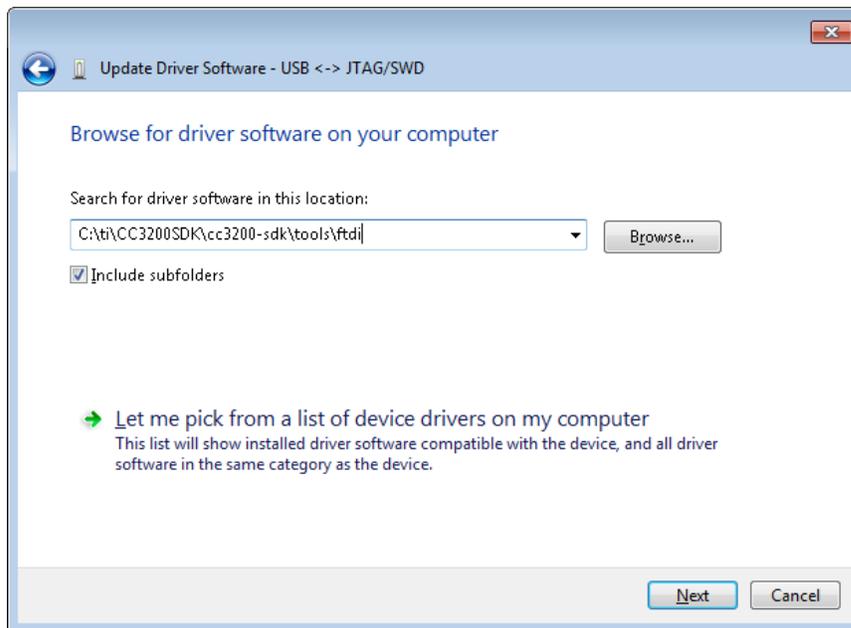


- ▶ Right click on the first instance of “USB <-> JTAG/SWD” and select “Update Driver Software...”
- ▶ Select “Browse my computer for driver software.”

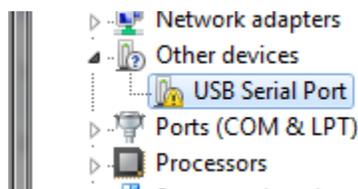
Note: If you've previously installed a TI board that uses FTDI drivers, this process is not necessary.



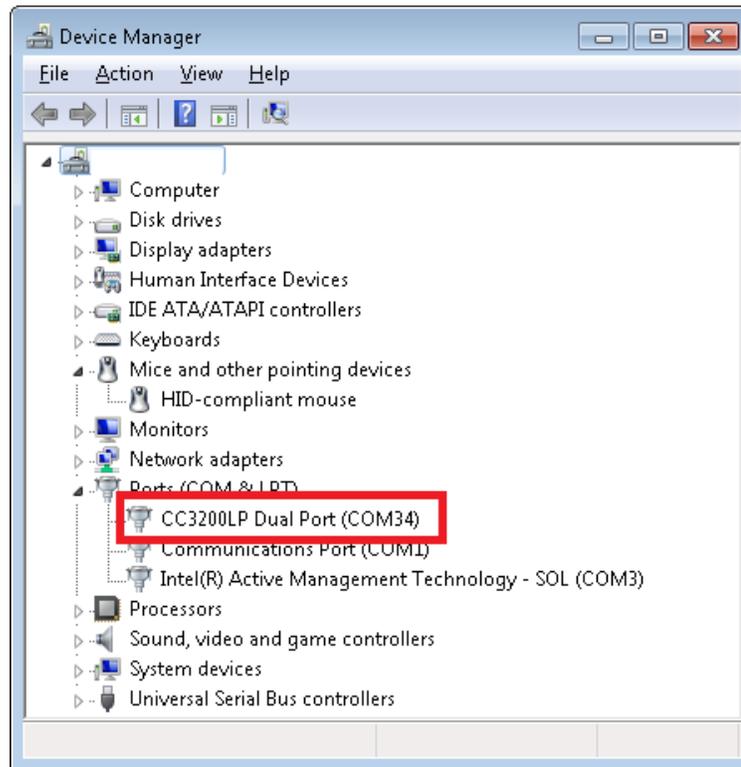
- Browse or fill the search path as `c:\ti\CC3200SDK\cc3200-sdk\tools\ftdi`, and press Next. There is no need to restart the PC.



- 15. Repeat the above steps for the other instance of "USB <-> JTAG/SWD."
- 16. Repeat the same steps for the instance of "USB Serial Port" that should have appeared as shown



The CC3200-LAUNCHXL will now be visible in the Device Manager. Note the COM port number that appears.



Trouble Installing FTDI Drivers?

All new boards should already have the correct FTDI templates flashed into the FTDI chips. However, if your board is not recognized, installing the driver from the SDK is not working, or the built-in FTDI template is corrupted, you'll need to flash the FTDI chip again. Go to this link for instructions to flash the FTDI chip:

[http://processors.wiki.ti.com/index.php/CC31xx %26 CC32xx FTDI Flashing#FTDI Templates](http://processors.wiki.ti.com/index.php/CC31xx_%26_CC32xx_FTDI_Flashing#FTDI_Templates)

Summary

After the development environment has been set up, see the following resources for further assistance in development:

[CC3200 Programmer's Guide](#) – This guide contains information on how to use the SimpleLink API for writing WLAN-enabled applications.

[PinMux Tool](#) – This utility helps determine how to best assign peripherals to the appropriate CC3200 package pins.

[Uniflash](#) – The Uniflash tool manually stores files on the external serial flash. This includes the application binary and SimpleLink firmware patch files. Also, any configuration files, security certificates, web pages, and so forth can be stored using this tool.

[CC3200 Wiki](#) – All information and tools for the CC3200, including the above, can be found on the CC3200 Wiki page

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