Technical Article

Feature-rich cloud-based development tools for TI MCUs and wireless connectivity devices

Earlier this year, TI launched its cloud-based development tool portal: dev.ti.com

Since that time, the tools available from this portal have grown and evolved into a feature-rich development platform. The primary advantage of using cloud-based software tools remains the same: ease of getting started. You can simply plug in your board, go to a URL and begin development. However, what is changing is the amount of development that you can do with the cloud-based tools.

When you are starting development, there are many items required before you can begin working. You need a development kit like a LaunchPad or SensorTag, some sort of development environment, driver libraries, examples and documentation, etc. Finding and setting up all of these items can take significant time. When your new kit arrives, the last thing you want to do is find and install all of these other items. You want to start using it as soon as you open the box. This is where cloud-based tools shine.

The development tools available on dev.ti.com currently include Resource Explorer, Code Composer Studio™ Cloud and PinMux, with more on the way.

Resource Explorer

Resource Explorer helps you find the latest examples, libraries, demo applications and documentation for your chosen platform. Select the device or board of your choice and it shows you everything that is available. Since Resource Explorer is fully integrated with TI's cloud-based software tools, your files are imported directly into your project to get you started with development in just a few clicks. A big advantage of working in the cloud is that you don't have to worry about not having the latest documentation or examples as it is always the latest version.

Code Composer Studio Cloud IDE

Another tool is Code Composer Studio Cloud, which is a simplified development environment. You can import any of the examples from Resource Explorer into Code Composer Studio Cloud and begin development. From there, you can then program your LaunchPad or SensorTag. Debugging capabilities have now been added, enabling you to step, set breakpoints and view variables. With features like this the cloud tools move from a space to run some demo applications to an environment where you can develop your own.

Since your projects are all stored in the cloud, you can work from anywhere. Simply log into the cloud, and you'll find all of your projects and source files right there in your Code Composer Studio Cloud workspace.

Pinmux

TI PinMux is a tool used to generate necessary code for pin configuration. Today's devices have more functionality than can be exposed via pins at the same time. Thus, you need to determine which peripherals and features you are using and then come up with a pin configuration that satisfies those requirements. It can be a challenging exercise to resolve all of the conflicts. PinMux is a software tool which provides a graphical user interface for configuring pin multiplexing settings, resolving conflicts and specifying I/O cell characteristics. Results are output as C header/code files that can be added to projects.

Using the tool is very simple. Start by selecting your device and package, then select each peripheral that you will be using and adjust any settings. As you add peripherals to your configuration, it automatically determines the optimal pin configuration. When you are done, the tool then generates the source code to add to your project. This tool represents advanced functionality that you wouldn't expect to find in a cloud-based application.

Visit dev.ti.com

While cloud-based software tools may not be ready to supplant their desktop-based counterparts, they are certainly evolving to offer an attractive alternative for those who are doing initial development or evaluating different platforms. For more information on TI's cloud-based development tool offering please visit dev.ti.com.

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