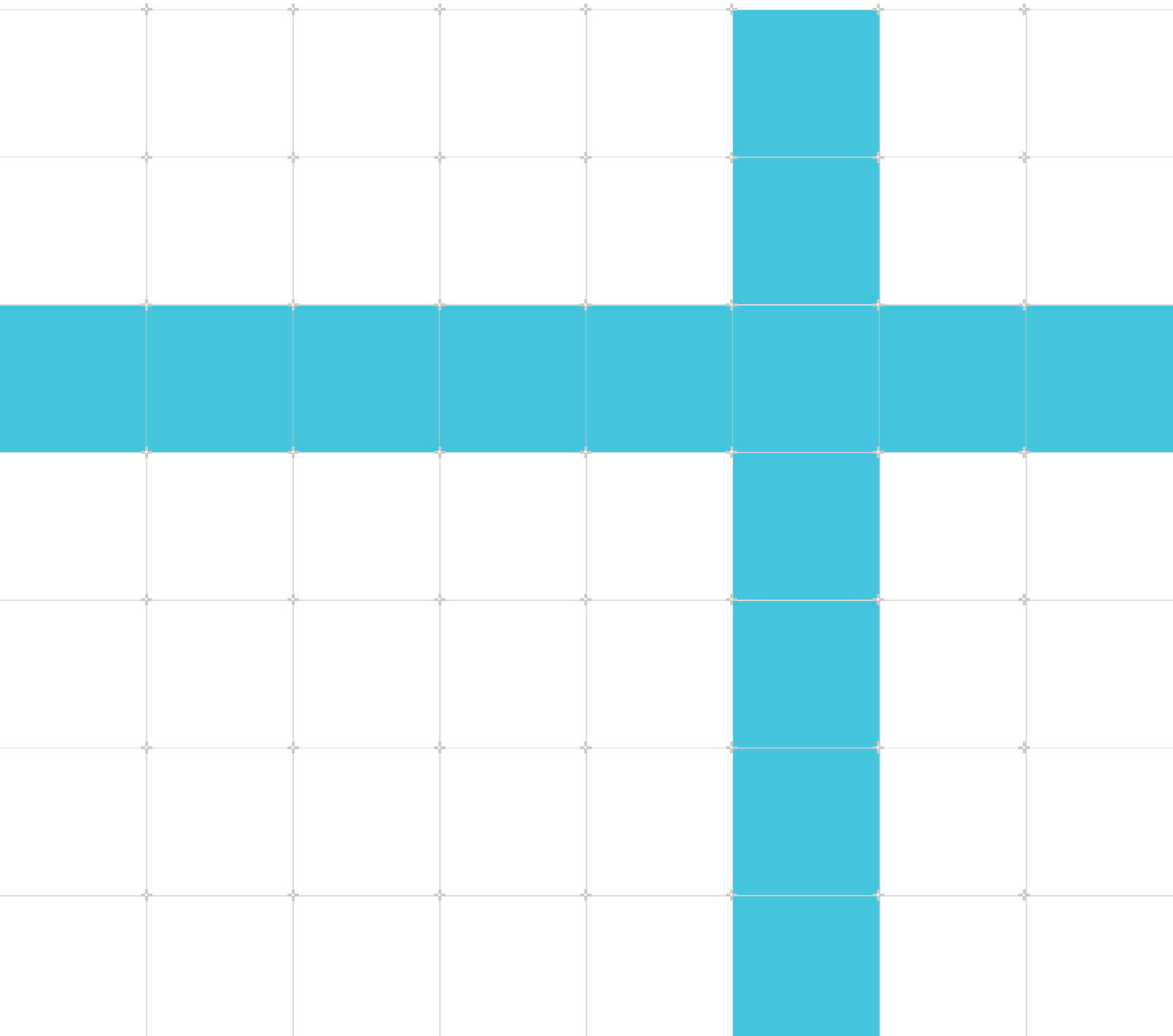
Installing the Keil MDK for STMicroelectronics Edition

Version 1.2.0

Application Note

Issue
kan344_1.2.0_en



Installing the Keil MDK for STMicroelectronics Edition Application Note

This document (kan344_1.2.0_en) was issued on 2024-08-16. There might be a later issue at http://developer.arm.com/documentation/kan344

The product version is 1.2.0.

See also: Proprietary notice | Product and document information | Useful resources

Start reading

If you prefer, you can skip to the start of the content.

Intended audience

Embedded Software and Firmware Developers.

Inclusive language commitment

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We believe that this document contains no offensive language. To report offensive language in this document, email terms@arm.com.

Feedback

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To provide feedback on the document, fill the following survey: https://developer.arm.com/documentation-feedback-survey.

Contents

1. Abstract

Arm offers software developers working with STMicroelectronics devices a free-to-use Keil MDK v6 tool suite.

It only works with the following STMicroelectronics device families based on the Arm Cortex-M0/M0+ cores:

- STM32C0
- STM32F0
- STM32G0
- STM32L0
- STM32U0
- STM32WL
- BlueNRG-1
- BlueNRG-2
- BlueNRG-LP
- BlueNRG-LPS

Figure 1-1: Keil MDK is made for STM32

This edition includes all tools and software components delivered with Keil MDK v6. It uses STM32CubeMX to configure peripherals and other device settings.

This application note explains how to download, install, and use MDK with STMicroelectronics devices based on the Cortex-M0/M0+ cores.

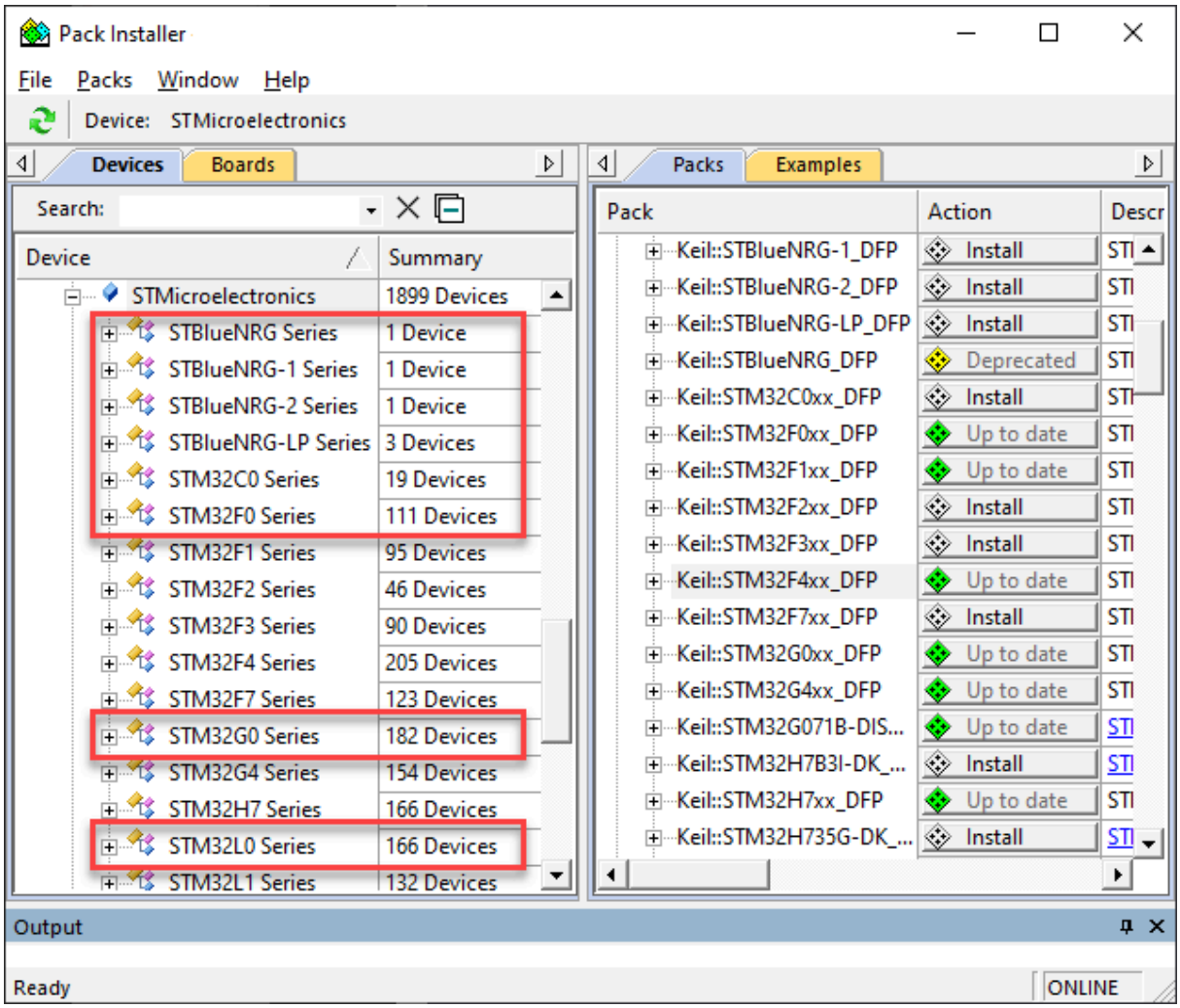
2. Installation

This chapter explains how to download and install Keil MDK on your local computer.

Keil uVision (Windows only)

1. Download the installer.
2. Run the downloaded MDK5xx.exe installer.
3. Select your installation location. If you have existing MDK installations that you want to keep, select a new folder. Once the installation has finished, Pack Installer opens.
4. In Pack Installer, click **Install** to download and install the device family packs supplied by STMicroelectronics.

Figure 2-1: Install STMicroelectronics CMSIS-Packs



Next, you need to activate your product.

Keil Studio

1. Download and install Microsoft Visual Studio Code on your computer.
2. Once installed, open the **Extensions** in the activity bar.

Figure 2-2: Open the extensions

3. Search for `Keil Studio Pack` and install the extension.

Next, you need to activate your product.

3. Activation

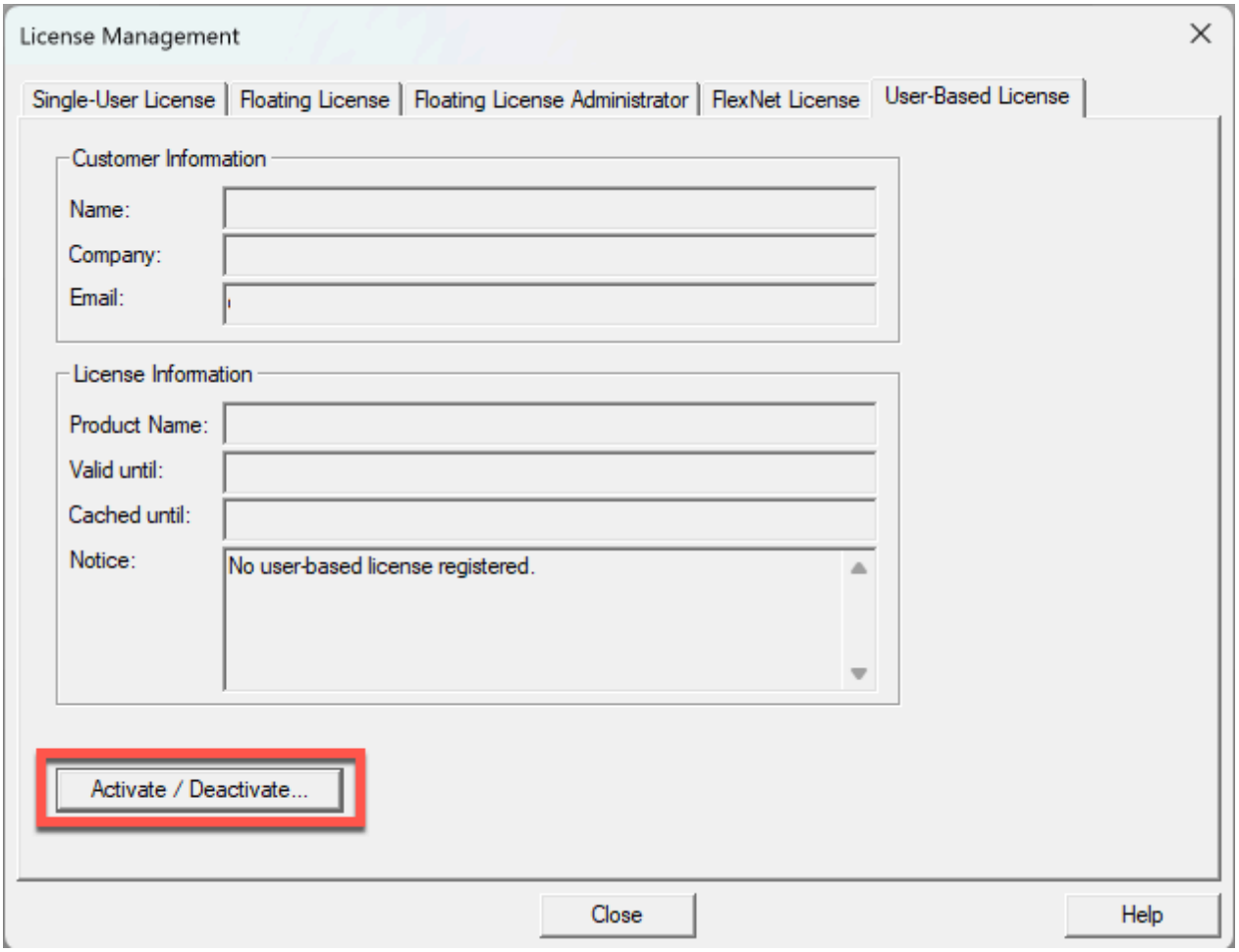
This chapter explains how to activate your product.

Keil uVision

Open uVision and go to **File — License Management...** and select the **User-Based License** tab.

Click the button **Activate / Deactivate**.

Figure 3-1: License Management - User-Based License

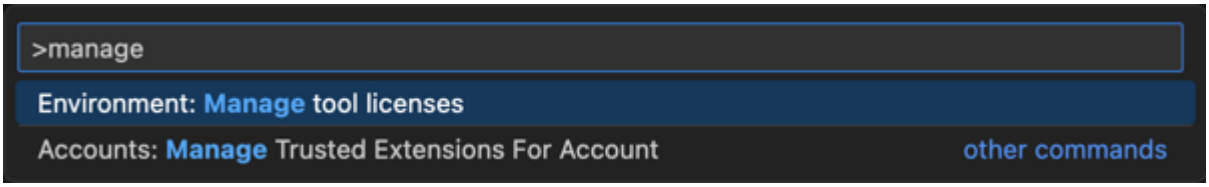


Continue in the Arm License Management Tool.

Keil Studio

Open Visual Studio Code and press Ctrl + Shift + p (Cmd + Shift + p on macOS). In the command box, enter `manage` and select **Environment: Manage tools licenses**:

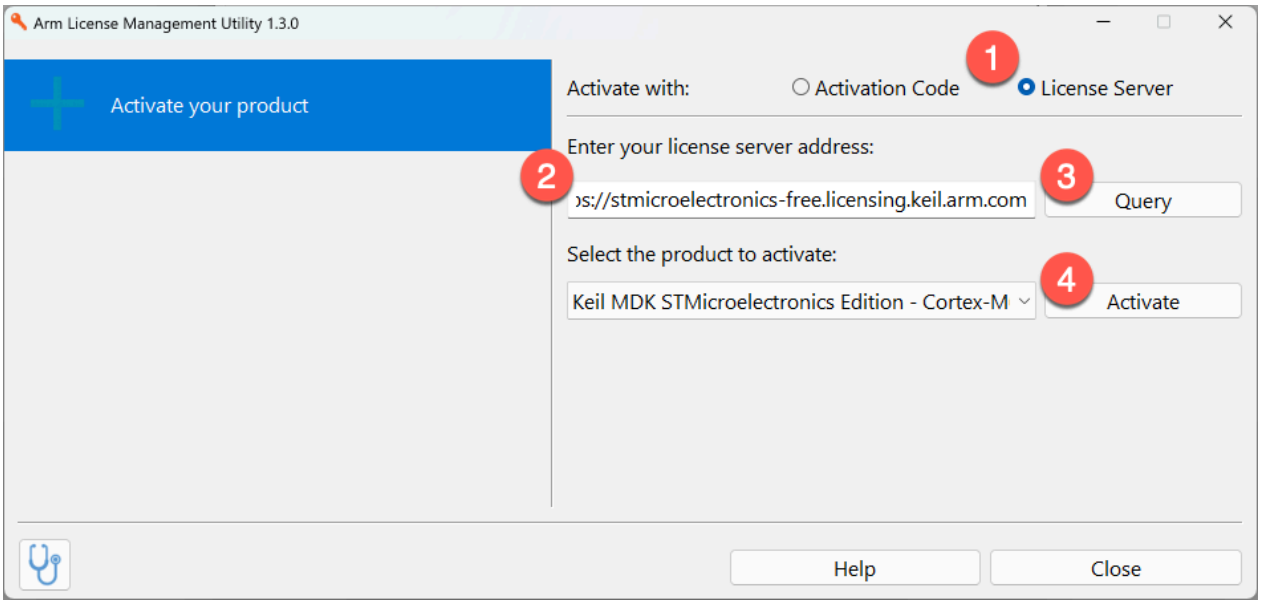
Figure 3-2: Run the manage tools licenses command



Continue in the Arm License Management Tool.

Arm License Management Tool

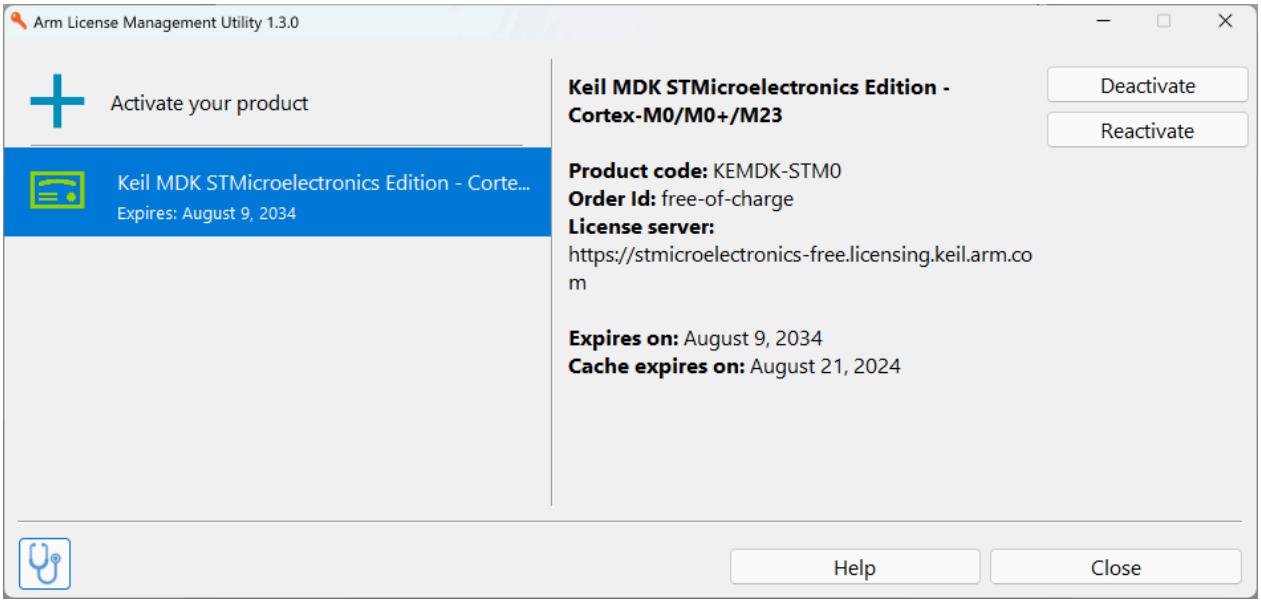
Figure 3-3: Arm License Management Utility



1. Enable **License Server**.
2. Enter the following license server address: `https://stmicroelectronics-free.licensing.keil.arm.com`.
3. Click the **Query** button.
4. Click on **Activate**.

The window changes and shows the information of the activated license.

Figure 3-4: Arm License Activated



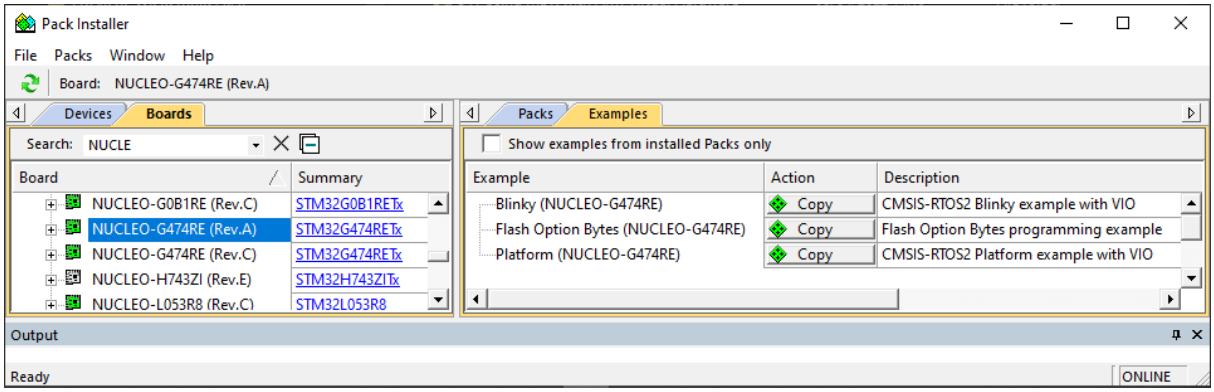
Next, test your set up using an example project.

4. Example Projects

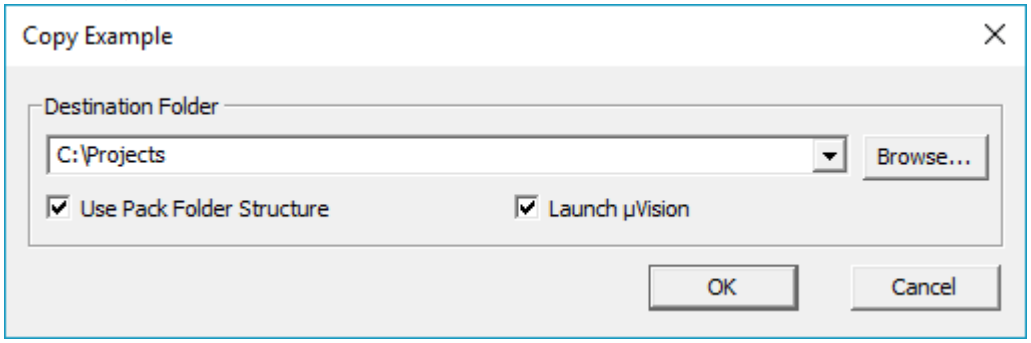
This chapter shows how to use example projects from the STMicroelectronics CMSIS-Packs to check the correct set up of the hardware and software.

Keil uVision

1. Open the Pack Installer from the uVision toolbar.
2. Switch to the **Boards** tab which allows to filter for specific development boards. On the **Examples** tab, select the example you want to install.



3. When pressing **Copy**, a dialog box will ask for the desired destination. The example will be directly installed into this folder. Folders that do not exist will be created automatically.

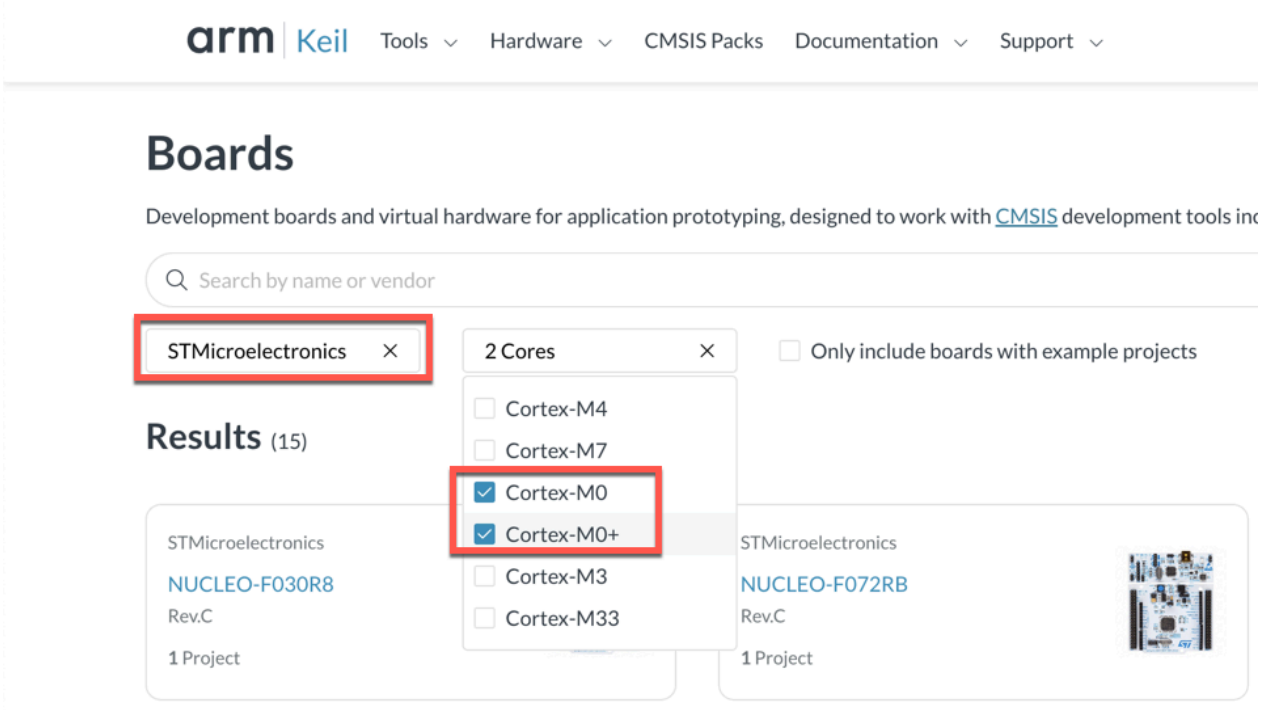


4. Tick **Launch uVision** to open the project immediately.

Keil Studio

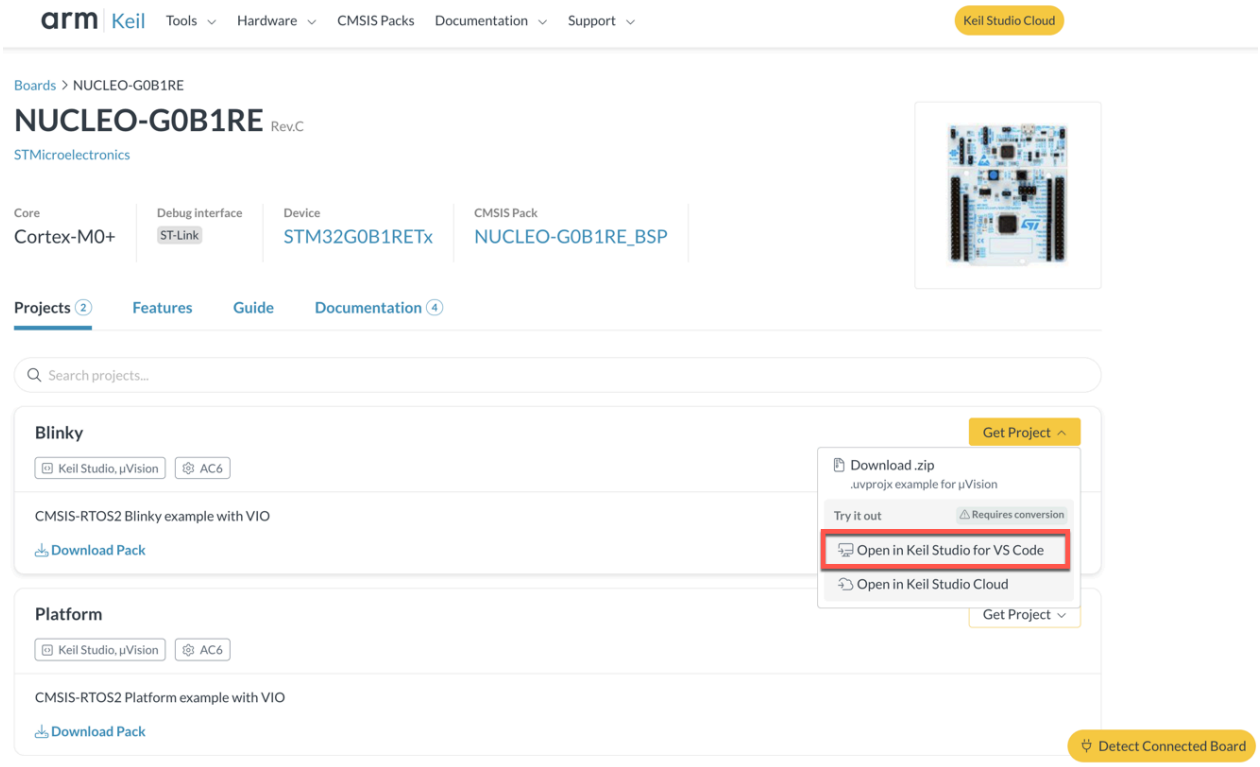
Open a web-browser and go to the CMSIS-Pack boards list. Narrow down your search by selecting **STMicroelectronics** as the *Vendor* and **Cortex-M0** and **Cortex-M0+** as the *Core*:

Figure 4-1: Find an example on keil.arm.com/boards



In the results, select the board you are interested in (for example, NUCLEO-G0B1RE). The board page opens with the **Projects** tab open:

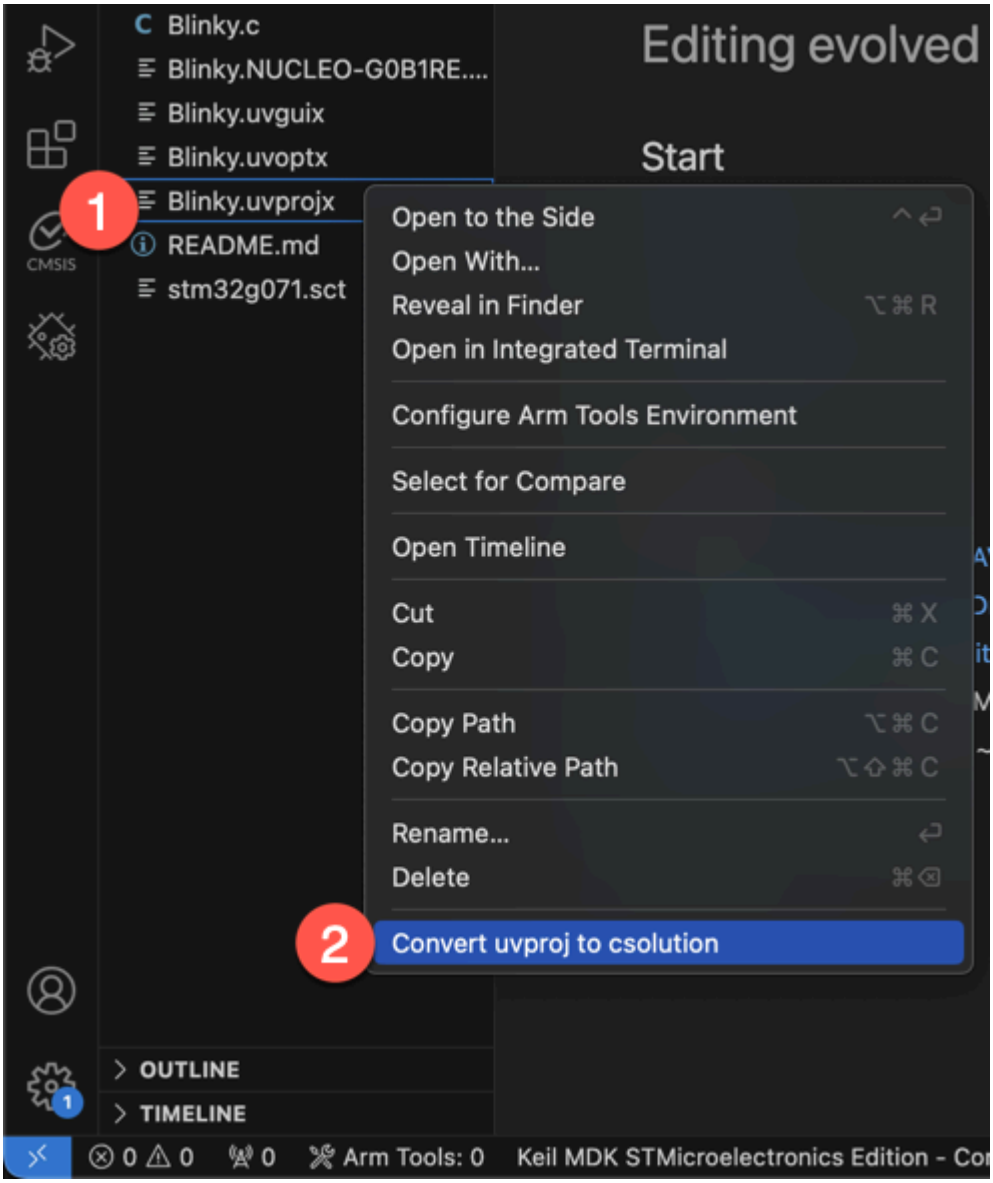
Figure 4-2: NUCLEO-G0B1RE's board page



On the right, click on **Get Project** and select **Open in Keil Studio for VS Code** to download and open the project in Keil Studio (you'll be asked to specify a download and unzip location).

If the project is in `uvprojx` format, you need to convert it to csolution first:

Figure 4-3: Converting a uvprojx file



1. Right-click the uvprojx file.
2. Select **Convert uvproj to csolution**.

The project will be converted and a `vcpkg_configuration.json` file will be created automatically. This file contains information about the additional Arm tools required to build and debug the project. Refer to the Keil Studio documentation for more information.

Further reading

Congratulations! You can now start working on embedded software development for STMicroelectronics devices!

If you want to learn more about Keil MDK, download the Getting Started Guide.

Learn how to create projects with Keil MDK and STM32CubeMX.

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PRE-1121-V1.0

Product and document information

Read the information in these sections to understand the release status of the product and documentation, and the conventions used in Arm documents.

Product status

All products and services provided by Arm require deliverables to be prepared and made available at different levels of completeness. The information in this document indicates the appropriate level of completeness for the associated deliverables.

Product completeness status

The information in this document is Final, that is for a developed product.

Revision history

These sections can help you understand how the document has changed over time.

Document release information

The Document history table gives the issue number and the released date for each released issue of this document.

Document history

Issue	Date	Confidentiality	Change
1.2.0	16 August 2024	Non-Confidential	Updates for user-based licensing
1.2.0	12 January 2023	Non-Confidential	Added STM32C0
1.0.0	11 January 2023	Non-Confidential	Initial release

Change history

The revisions tables describe the technical changes between released issues of this document.

Conventions

The following subsections describe conventions used in Arm documents.

Glossary

The Arm Glossary is a list of terms used in Arm documentation, together with definitions for those terms. The Arm Glossary does not contain terms that are industry standard unless the Arm meaning differs from the generally accepted meaning.

See the Arm Glossary for more information: developer.arm.com/glossary.

Typographic conventions

Arm documentation uses typographical conventions to convey specific meaning.

Convention	Use
italic	Citations.
bold	Interface elements, such as menu names. Terms in descriptive lists, where appropriate.
`monospace`	Text that you can enter at the keyboard, such as commands, file and program names, and source code.
`monospace underline`	A permitted abbreviation for a command or option. You can enter the underlined text instead of the full command or option name.
`<and>`	Encloses replaceable terms for assembler syntax where they appear in code or code fragments. For example: `MRC p15, 0, <Rd>, <CRn>, <CRm>, <Opcode_2>`
SMALL CAPITALS	Terms that have specific technical meanings as defined in the *Arm® Glossary*. For example, **IMPLEMENTATION DEFINED**, **IMPLEMENTATION SPECIFIC**, **UNKNOWN**, and **UNPREDICTABLE**.

We recommend the following. If you do not follow these recommendations your system might not work.

Your system requires the following. If you do not follow these requirements your system will not work.

You are at risk of causing permanent damage to your system or your equipment, or harming yourself.

This information is important and needs your attention.

A useful tip that might make it easier, better or faster to perform a task.

A reminder of something important that relates to the information you are reading.

Useful resources

This document contains information that is specific to this product. See the following resources for other useful information.

Access to Arm documents depends on their confidentiality:

- Non-Confidential documents are available at developer.arm.com/documentation. Each document link in the following tables goes to the online version of the document.
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