Installation of Keil Microcontroller Development Kit (MDK)

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Warning: **Do not connect the Discovery Kit to your PC or laptop before the software installation completes.** Windows OS often mistakenly associates the wrong USB driver to the kit if you connect your kit to a PC before installing the USB driver. Thus, you will not be able to program the kit. The solution is to go to the control panel and change the USB driver to the ST-Link USB driver.

Step 1: Install Keil MDK-ARM

1. Download the latest free evaluation version of Keil MDK-ARM from the following link:

   https://www.keil.com/demo/eval/arm.htm

   - Keil MDK-ARM contains µVision 5 IDE (Integrated Development Environment) with a debugger, flash programmer, and the ARM compiler toolchain.
   - The major limitation of the free version is that programs that generate more than 32 Kbytes of code and data will not compile, assemble, or link.

2. Run the downloaded **MDK5xx.exe** and install it to the default path. The software takes 2GB of disk storage space. You can install it to a different driver instead of the default C drive if there is limited space in the C drive.
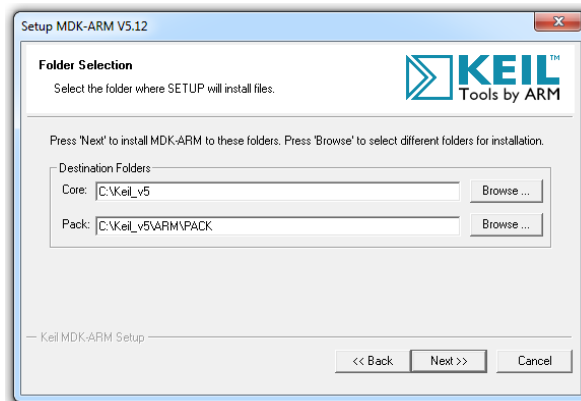

After the core software is installed, a dialog will show up to install Keil Pack. It automatically downloads selected components (called packs) from http://www.keil.com/dd2/pack/
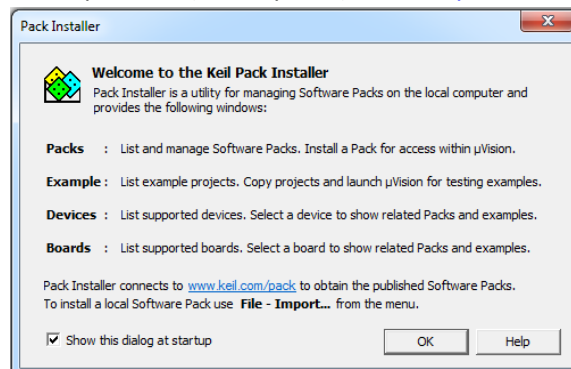
Click OK, and then the following window shows up.

If you use the Discovery kit with STM32L4 MCU, please select the device **STM32L4 Series** on the right, and all its available components will be shown on the left. Then, install or update the following software components:

- **ARM::CMSIS**
- **Keil::MDK-Middleware**
- **Keil::STM32L4xx_DFP**
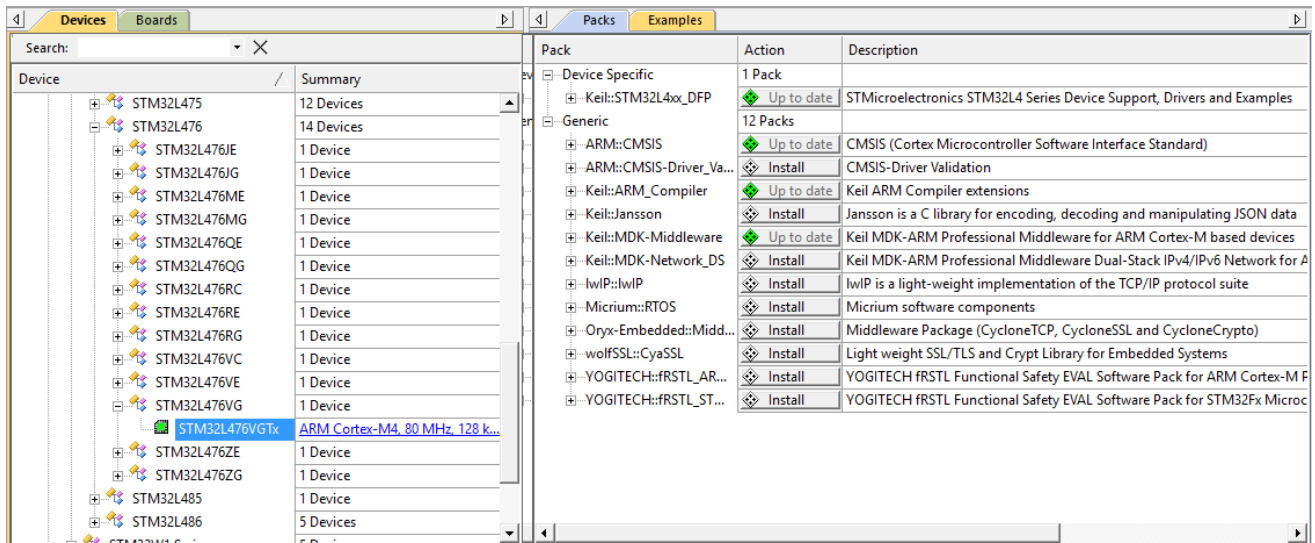
Step 2: Install ST-Link USB Driver

- Do not connect the discovery kit before you install the USB driver for ST-Link.
- Go to the directory **C:\Keil_v5\ARM\STLink\USBDriver** and run **stlink_winusb_install.bat** in administrator mode (Right click and select run as an administrator).
- Now you can connect the discovery kit to the computer via a "Type A to mini-B" USB cable. The discovery kit should be correctly recognized as an "STMicroelectronics STLink dongle."
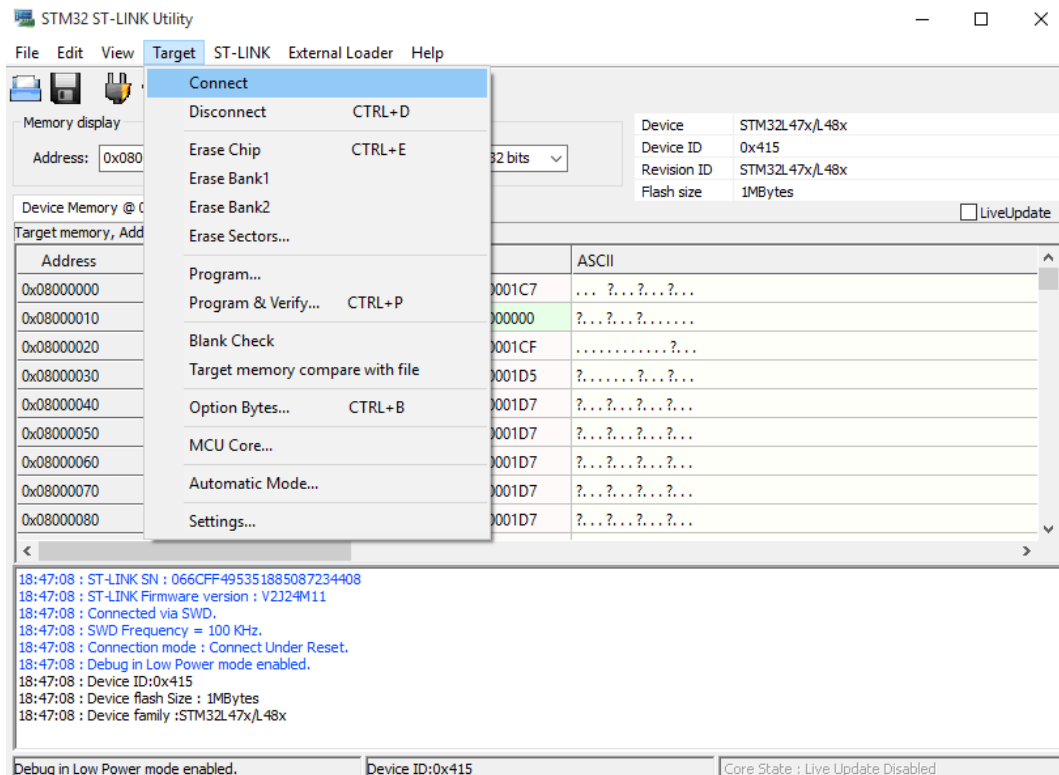
Step 3: Install STM32 ST-Link Utility

You can download the installation software from the following link:

http://www.st.com/web/en/catalog/tools/PF258168

Typically, we use Keil to program the discovery kit. However, the ST-Link utility can erase the flash memory if you mistakenly program the debug/program pins of the STM32L processor. See the YouTube tutorial for more details:

https://youtu.be/OiwwB0AvIBI

Step 4: Install STM32CubeProgrammer

STM32 ST-LINK utility was recently replaced by STM32CubeProgrammer, which can be downloaded from the following link: https://www.st.com/en/development-tools/stm32cubeprog.html

STM32CubeProgrammer allows us to erase the buggy code we have downloaded to the chip.