ClearCore Motion and I/O Library - Manual Installation for Microchip Studio

Follow these steps to manually install all libraries needed to begin programming your ClearCore with Microchip Studio. Microchip Studio is the recommended full-featured IDE for writing, uploading, and debugging ClearCore application code.
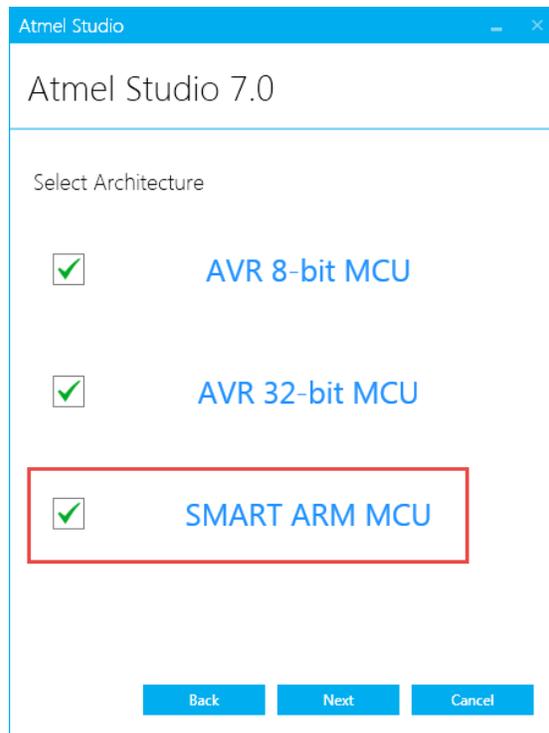
> *Note: An installer file is included on Teknic's website which automatically completes most of this process for you. Use these instructions only if that installer fails to complete.*

1) Download ClearCore_Port_Driver_Install.zip. Open this file and run the executable inside to install USB drivers for ClearCore.
https://www.teknic.com/files/downloads/ClearCore_Port_Driver_Install.zip

2) Download and install the latest version of Microchip Studio (version 7.0.1645 or later required). During the install, ensure the "SMART ARM MCU" architecture is selected.
https://www.microchip.com/en-us/tools-resources/develop/microchip-studio#Downloads

3) Once installation completes, launch Microchip Studio and go to Tools > Device Pack Manager. Use the search bar to search for and install the following two packs required for the ClearCore library. These specific point-rev versions are required. One or both may already be installed by default:
- CMSIS 4.5.0
- SAME53_DFP 1.1.118

4) Download or clone the ClearCore Motion and I/O Library GIT source repository to your PC. This directory can be placed anywhere on your PC: https://github.com/Teknic-Inc/ClearCore-library

5) Navigate to where you have placed the repository, which will be named "ClearCore-library". Inside is the source code for the ClearCore Motion and I/O Library, and several example projects/solutions to use:

- libClearCore: the ClearCore Motion and I/O Library firmware source code.

- LwIP: the Ethernet implementation used by the ClearCore library.

- Atmel_Examples: 40+ example projects written to demonstrate ClearCore features (I/O, communication, motor control, etc.).

- ProjectTemplate: a basic template project already set up to build and link in the ClearCore library code.

6) Open the ProjectTemplate solution in Microchip Studio to upload your first project. This will simply blink ClearCore's red LED. ClearCore must be powered to upload application code.
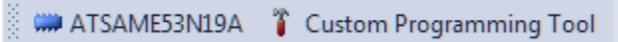
You can upload application code to ClearCore in one of two ways:

a) Over USB connected to ClearCore's USB type-B connector. Use the pre-configured "Custom Programming Tool" in Atmel Studio to do this.

or

b) Use an Atmel-ICE debugger connected to ClearCore's JTAG debugger connector, located under the cover. This is required to use any debugging features of Atmel Studio. Use the "SAM" connector on the Atmel-ICE, not the "AVR" connector.

Be sure the debugger/programmer you are using is selected in Atmel Studio.

ATSAME53N19A   Custom Programming Tool

or

ATSAME53N19A   SWD on Atmel-ICE (J41800098608)