

## **GCC ARM 7.3 + GDB ARM 8.1**

Vast set of ARM processors can be easily programmed with usage of GCC ARM tool. This tutorial is intended for Cortex M4F/armv7-m ( with float co-processor ). Minimal hardware requirement is Nucleo-F411RE board, with provided programmer.

1) compile from sources some compiler for CM4F-based MCU's. It will be based on newlib / newlib-nano 2.1.0:

```
#sudo aptitude install -y build-essential flex bison libgmp3-dev \  
libncurses5-dev libmpc-dev autoconf texinfo libtool libftdi-dev libusb-1.0-0-dev \  
zlib1g zlib1g-dev python-yaml openocd ncurses-dev build-essential git \  
libgmp-dev libmpfr-dev libmpc-dev zlib1g-dev p7zip-full  
#7za x 00_nucleo.7z  
#sudo /00_empty/build_arm_tools.sh
```

2) run provided trivial blink example ( first run could demand start-with-reset - just push reset button during flash write ):

```
#/00_empty/RUN_COMMANDS.sh
```

3) consider learning processor capabilities with C programming language ( folder 00\_doc ).

4) C standard libs should be used with care, and on-going program benchmarks – for example: trivially implementable standard sprintf() uses 16kiB of Flash.