



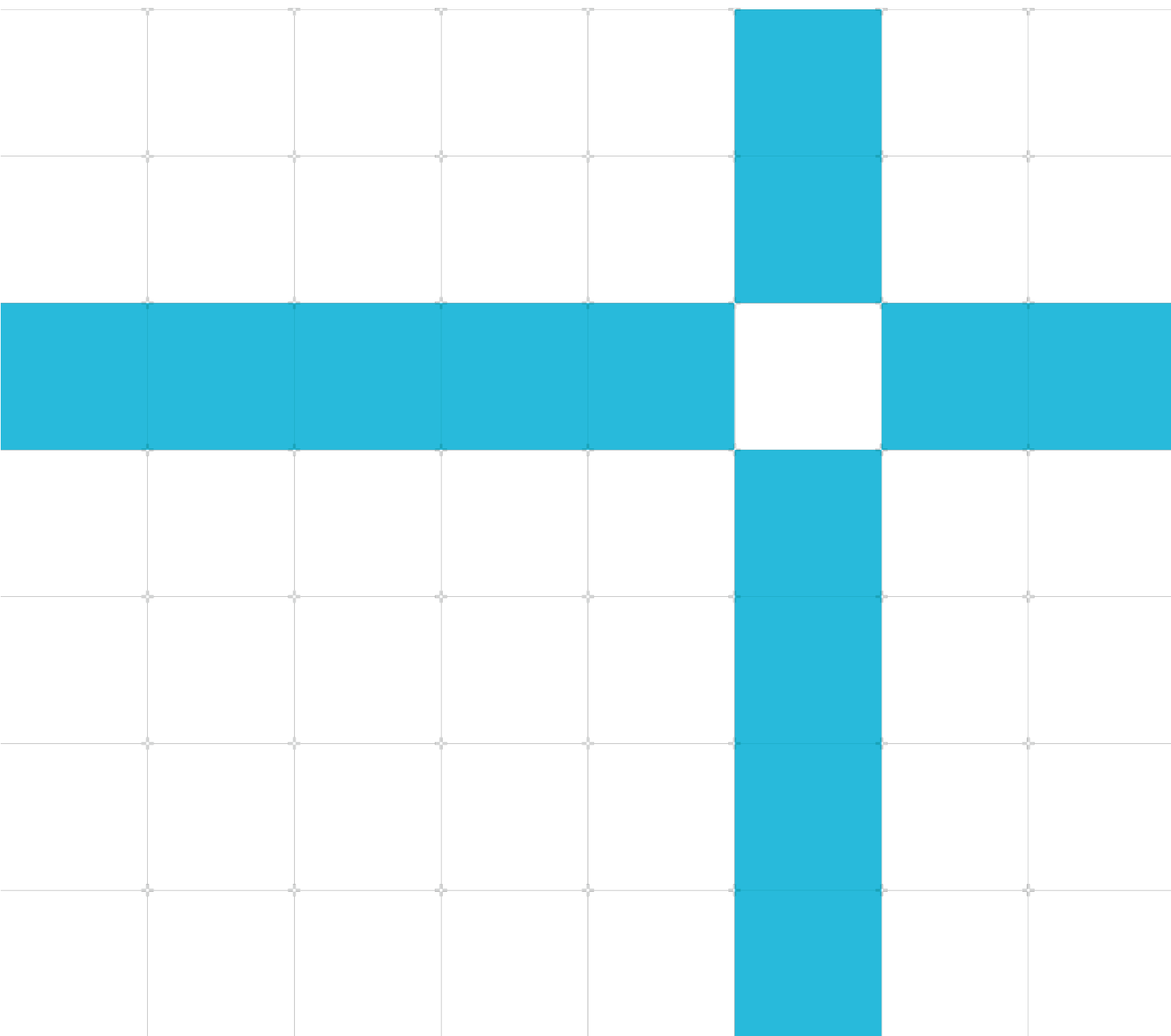
Add new compiler toolchains to Arm Development Studio

Non-Confidential

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Add new compiler toolchains to Arm Development Studio

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Release information

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1.0	15 April 2020	Non-Confidential	First release

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1 Overview

In this tutorial, we show how to add and configure new compiler toolchains to your Arm Development Studio (Arm DS) project. The toolchains include Arm Compiler 5, Arm Compiler 6, and GCC. The example in this tutorial demonstrates how to add a GCC toolchain for Arm DS.

Switching between different versions of the same toolchain keeps toolchain flags on. Therefore, projects can be shared between colleagues without reconfiguring the path.

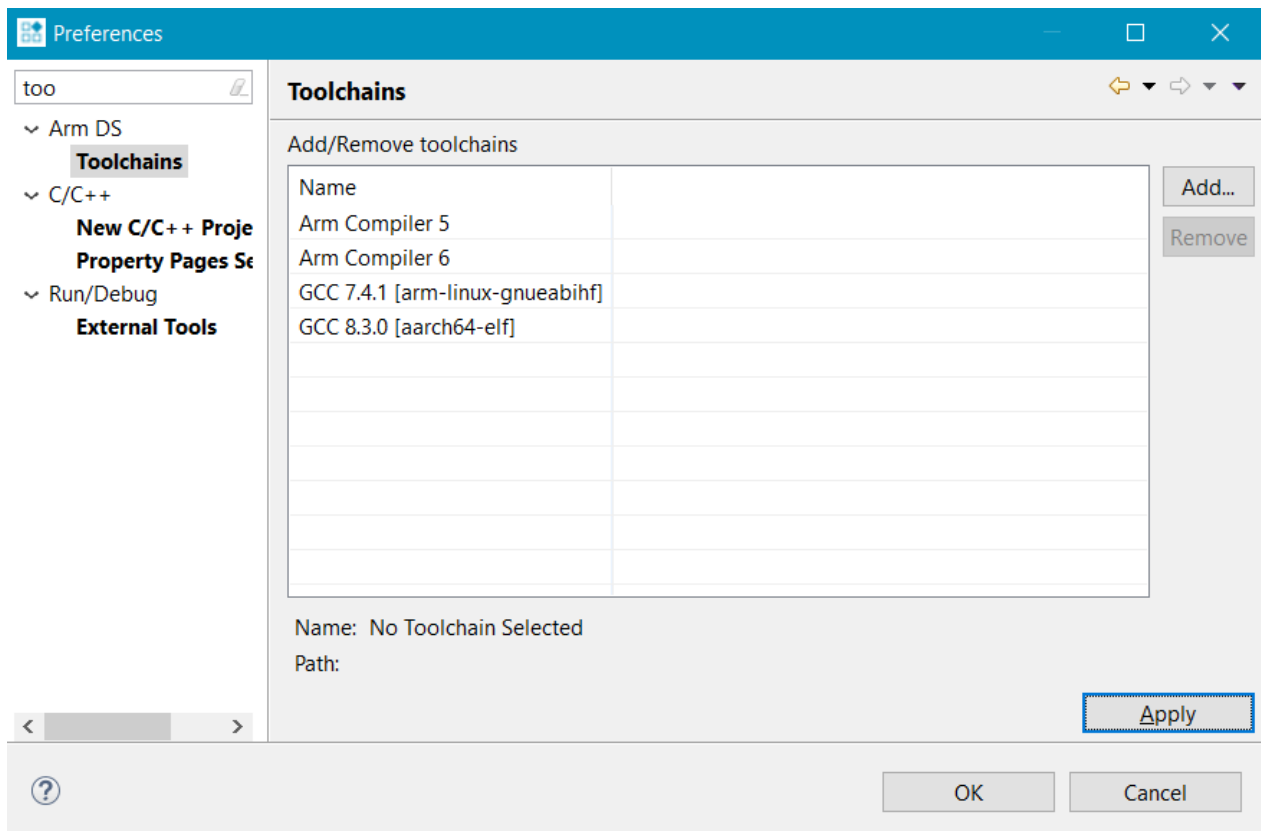
Note: In the default installation of Arm DS, Arm Compiler 5 and Arm Compiler 6 are included. The GCC compiler must be added separately.

2 Configure Arm Development Studio toolchain settings

Arm Development Studio (Arm DS) includes two compiler toolchains, Arm Compiler 5 and Arm Compiler 6. These toolchains are part of the default Arm DS installation. GCC toolchains are not built in with Arm DS. In this tutorial, we add a GCC toolchain for Arm DS.

Follow these steps:

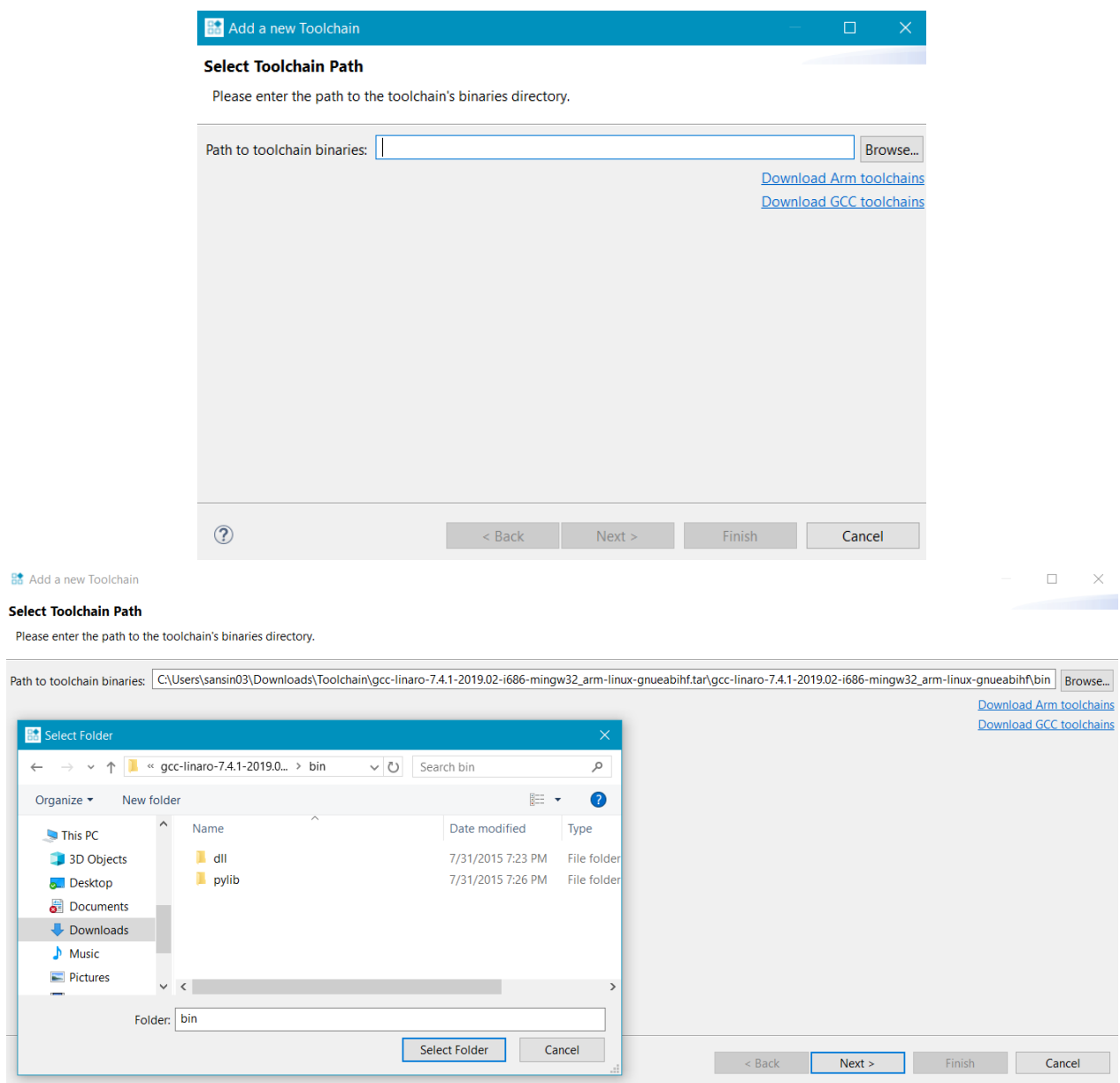
1. Open Arm Development Studio and select **Window**.
2. Click **Preferences**, then in the navigation tree, select **Arm DS**.
3. Click **Toolchains**, in the navigation drop down, as you can see in the following screenshot:



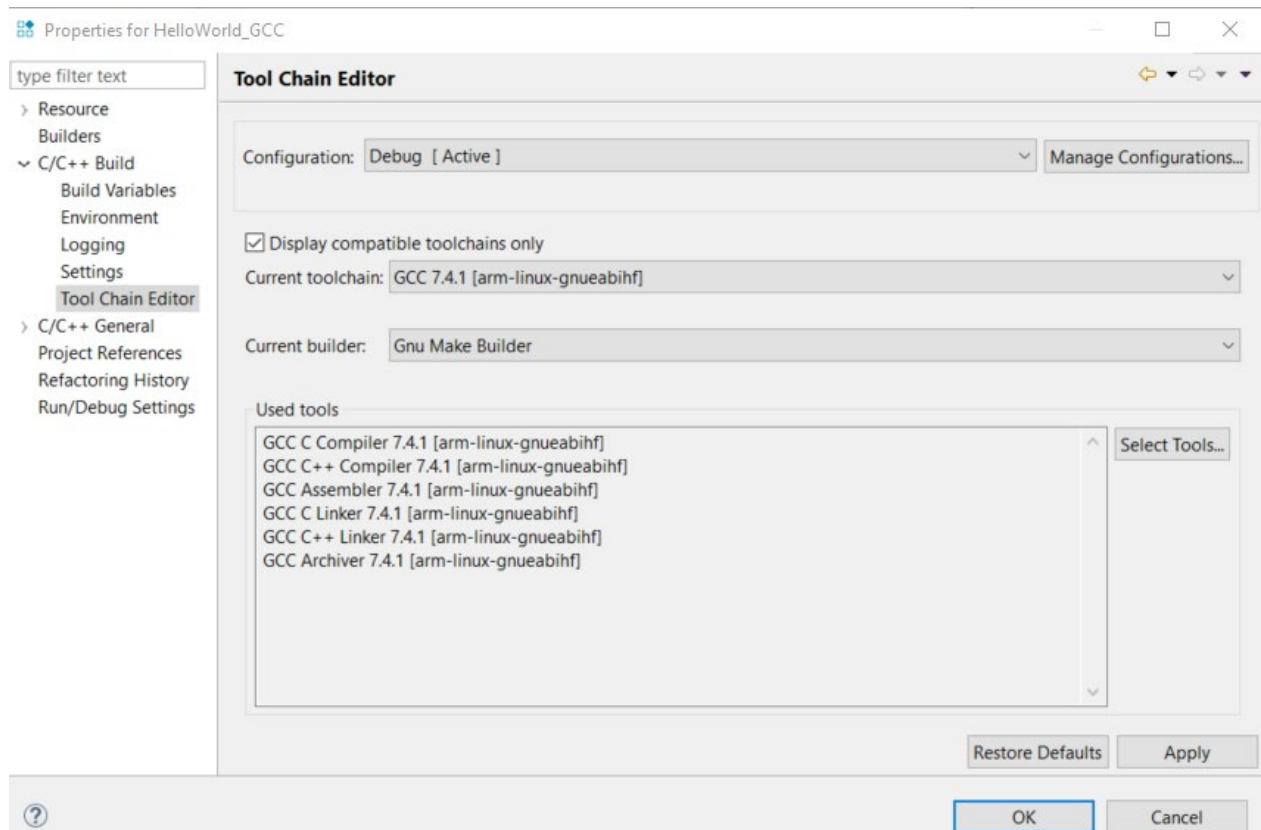
4. Click **Add**.
5. Select one of these options to download a compiler toolchain:
 - Navigate to [Arm Compiler downloads](#) for the latest Arm Compiler toolchain.
 - Download a GCC toolchain from [Linaro](#).
 - Download the [GNU Arm Embedded toolchain](#) for Arm processors.

Note: If you have previously downloaded a compiler toolchain, browse to the location of the toolchain bin directory.

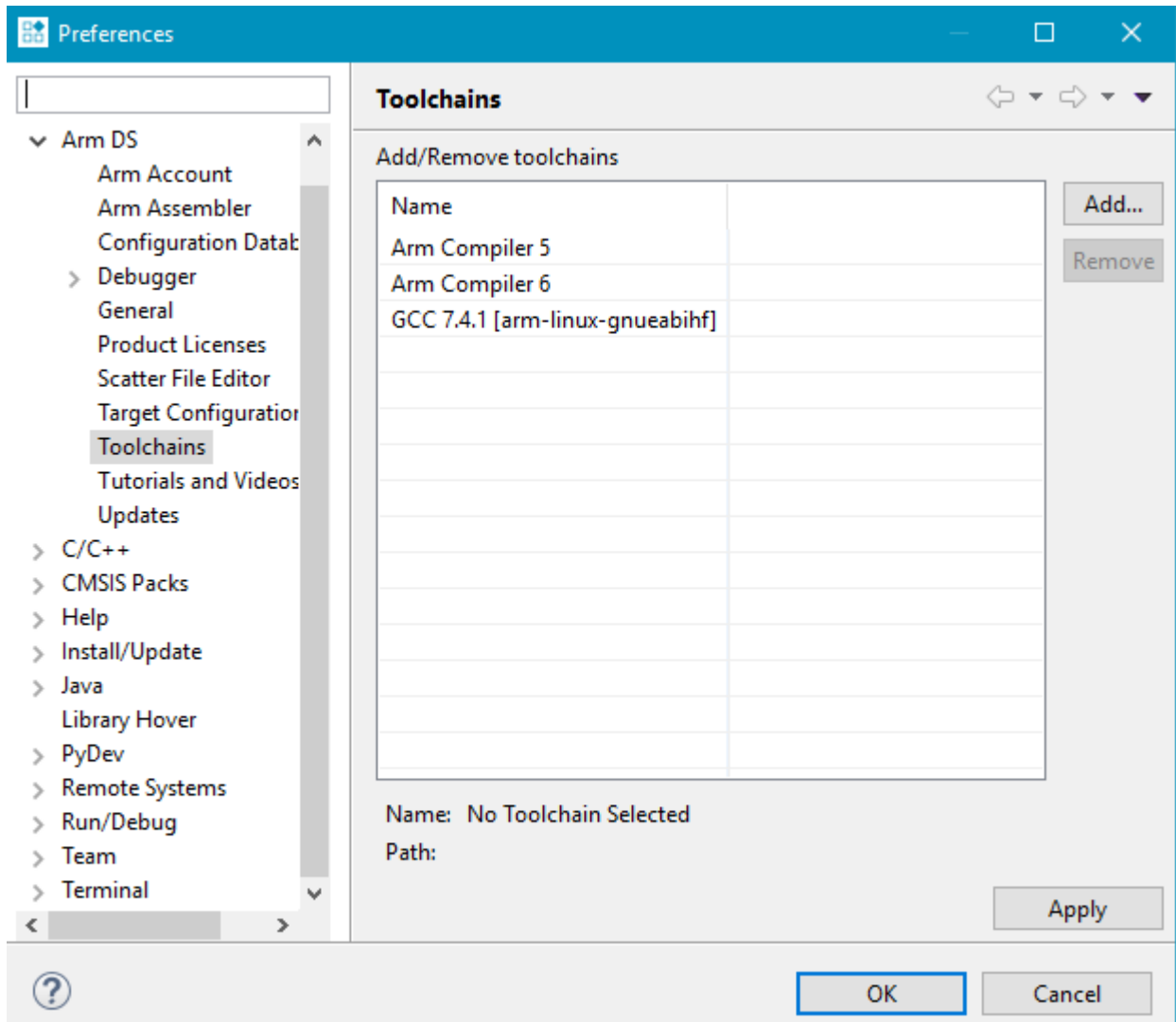
The following screenshots display these options:



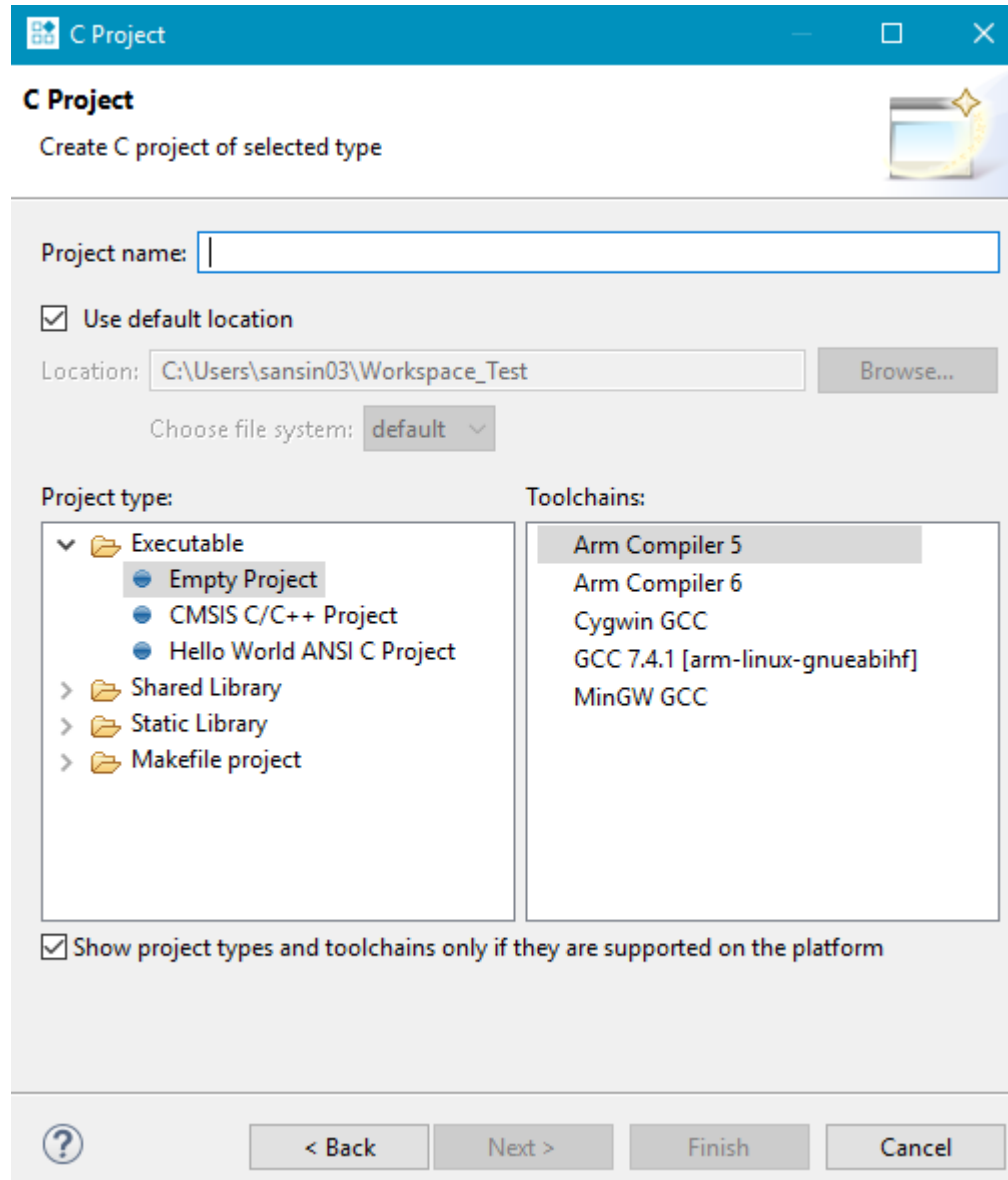
- Click **OK** to run autodetection. A full set of information about the toolchain is provided. For custom implementations of GCC, you can manually edit these fields. The following example screenshot uses GCC 7.4.1:



- Click **Finish** to complete the process. You can now see the new toolchain listed alongside the built-in toolchains, as seen in the following screenshot:



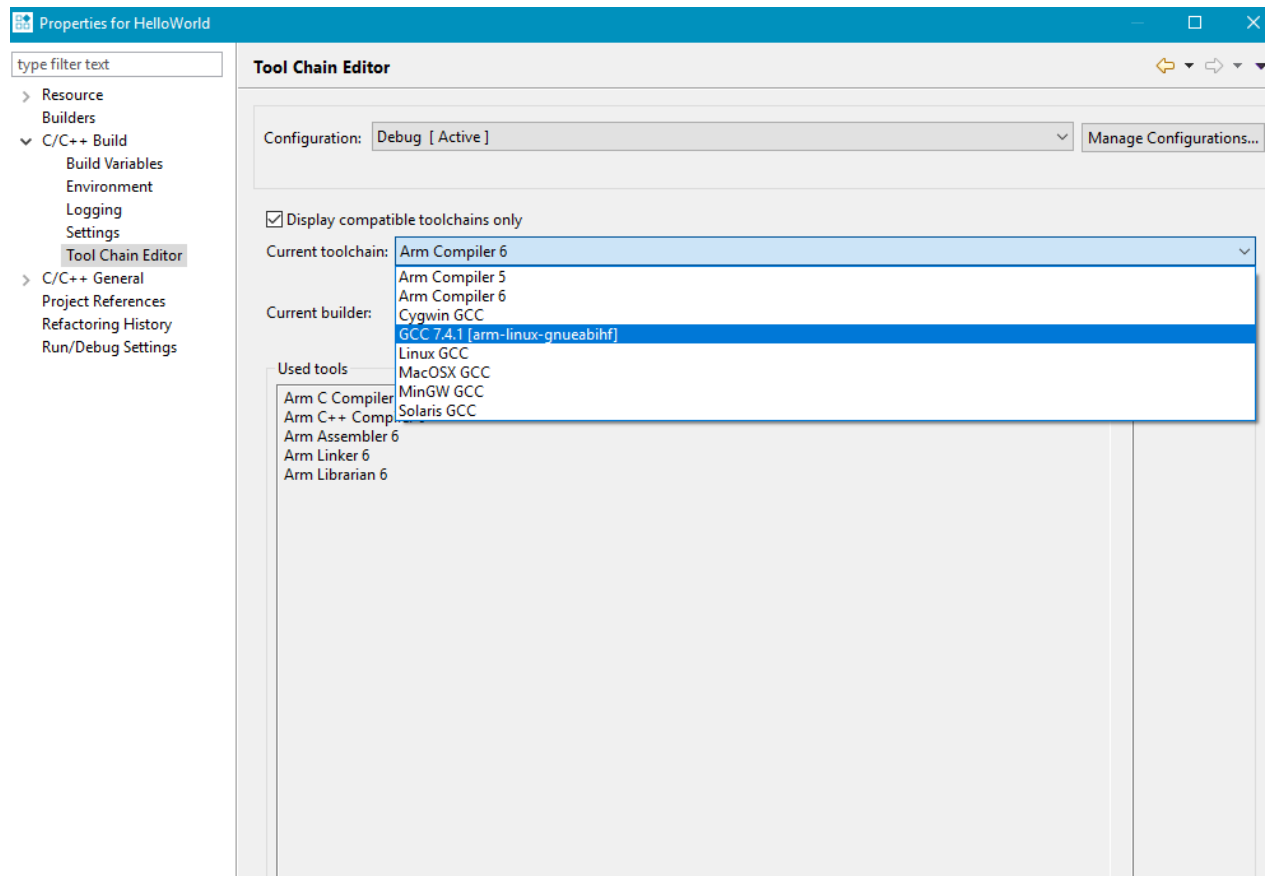
You will be prompted to restart Arm DS IDE for these changes to apply. When complete, the new toolchain is listed as an option when you start a new project, as shown in this screenshot:



You can reconfigure existing projects to use the new toolchain:

1. Select the project and **right-click**.
2. Click **Properties**, then **C/C++ Build** and then click **Tool Chain Editor**.
3. Select your toolchain under the **Current toolchain** drop-down.
4. Clean and build the project again after you change the toolchain.

This is displayed in the following screenshot:



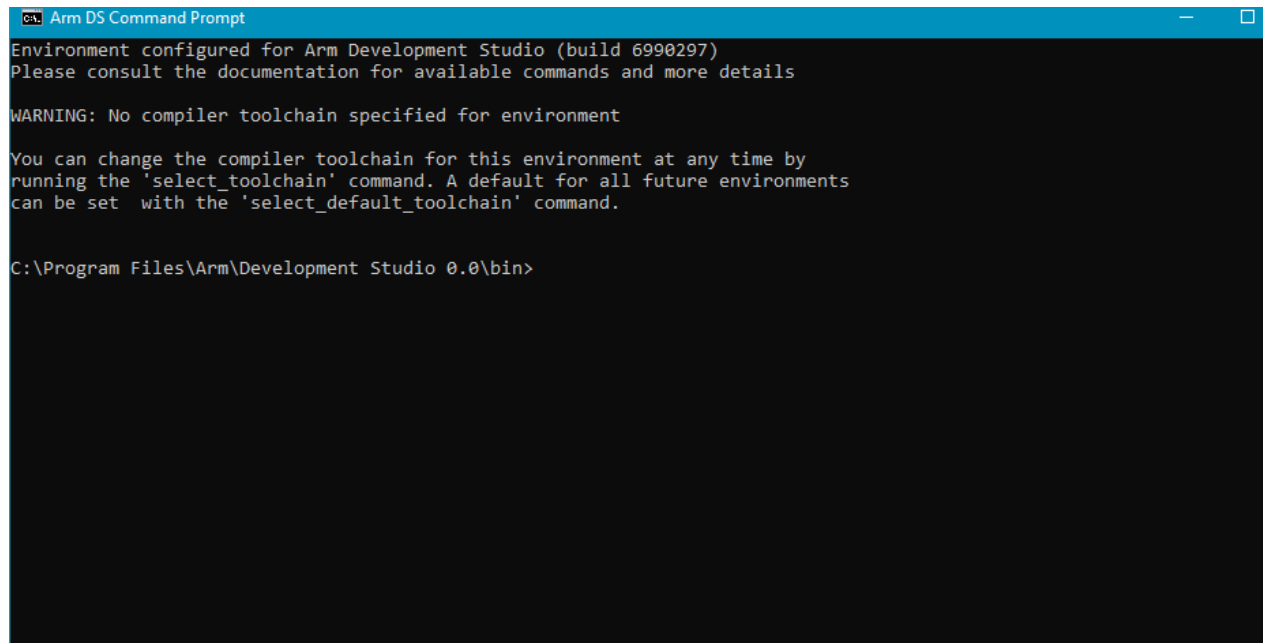
Arm DS remembers your flags and other settings when swapping between different versions of the same toolchain, so there is no need to re-enter them.

Note: Arm DS does not remember your flags and other settings when moving between different toolchains like Arm Compiler 5 and Arm Compiler 6.

3 Adding a toolchain from the Command Prompt

It is possible to add and select new toolchains using the Arm DS Command Prompt.

On start-up, the following warning message is displayed: No compiler toolchain specified for environment. To specify a toolchain, use the `select_default_toolchain` command, as shown in the following screenshot:



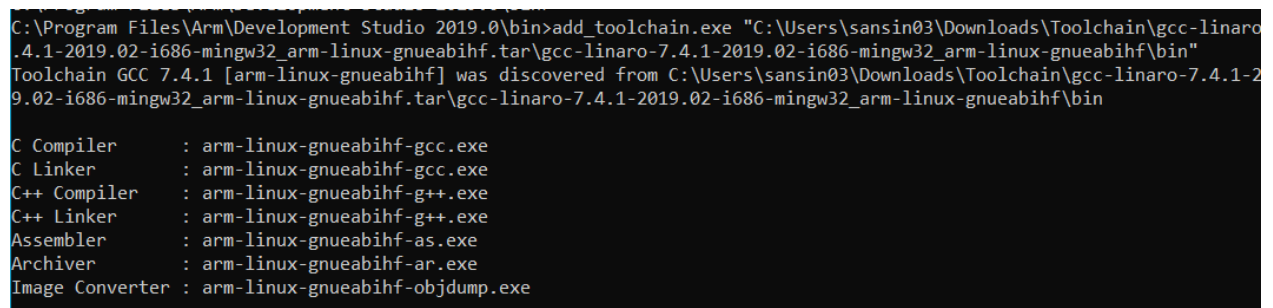
```
Arm DS Command Prompt
Environment configured for Arm Development Studio (build 6990297)
Please consult the documentation for available commands and more details

WARNING: No compiler toolchain specified for environment

You can change the compiler toolchain for this environment at any time by
running the 'select_toolchain' command. A default for all future environments
can be set with the 'select_default_toolchain' command.

C:\Program Files\Arm\Development Studio 0.0\bin>
```

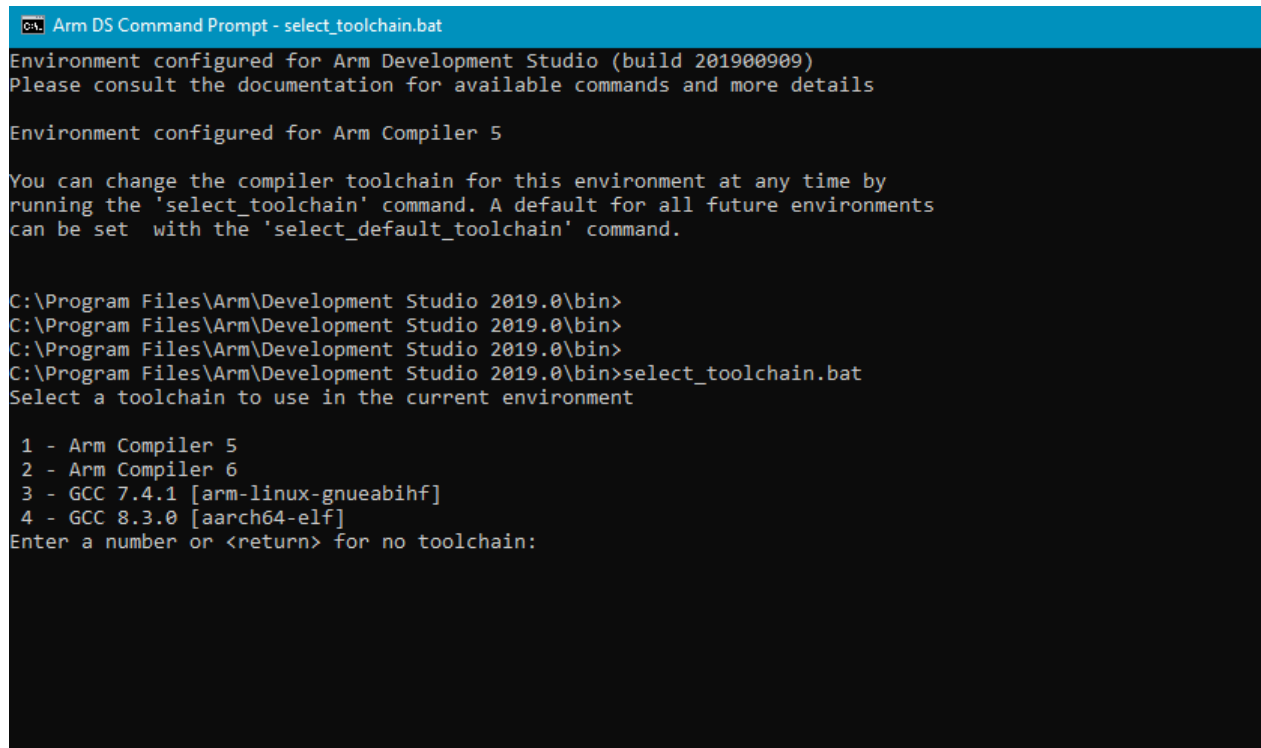
To add a toolchain, use the `add_toolchain` command followed by the path to the folder where the binary is located. For example, `add_toolchain "Path\to\toolchain\bin"`. Just like the GUI, you can finish the process, or manually edit the details, as shown in the image:



```
C:\Program Files\Arm\Development Studio 2019.0\bin>add_toolchain.exe "C:\Users\sansin03\Downloads\Toolchain\gcc-linaro-7.4.1-2019.02-i686-mingw32_arm-linux-gnueabi\bin"
Toolchain GCC 7.4.1 [arm-linux-gnueabi] was discovered from C:\Users\sansin03\Downloads\Toolchain\gcc-linaro-7.4.1-2019.02-i686-mingw32_arm-linux-gnueabi\bin

C Compiler      : arm-linux-gnueabi-gcc.exe
C Linker        : arm-linux-gnueabi-gcc.exe
C++ Compiler    : arm-linux-gnueabi-g++.exe
C++ Linker      : arm-linux-gnueabi-g++.exe
Assembler       : arm-linux-gnueabi-as.exe
Archiver        : arm-linux-gnueabi-ar.exe
Image Converter : arm-linux-gnueabi-objdump.exe
```

Entering `select_toolchain` brings up a numbered list including the new toolchain, see the following image:



```
CA: Arm DS Command Prompt - select_toolchain.bat
Environment configured for Arm Development Studio (build 201900909)
Please consult the documentation for available commands and more details

Environment configured for Arm Compiler 5

You can change the compiler toolchain for this environment at any time by
running the 'select_toolchain' command. A default for all future environments
can be set with the 'select_default_toolchain' command.

C:\Program Files\Arm\Development Studio 2019.0\bin>
C:\Program Files\Arm\Development Studio 2019.0\bin>
C:\Program Files\Arm\Development Studio 2019.0\bin>
C:\Program Files\Arm\Development Studio 2019.0\bin>select_toolchain.bat
Select a toolchain to use in the current environment

1 - Arm Compiler 5
2 - Arm Compiler 6
3 - GCC 7.4.1 [arm-linux-gnueabihf]
4 - GCC 8.3.0 [aarch64-elf]
Enter a number or <return> for no toolchain:
```

You can select the toolchain that you want, and build the project based on the selected toolchain.