

How to Create, Configure, and Debug a HelloWorld Project in ARM DS 2026.1 IDE

The following are the sequence of steps to create, configure, and debug a new HelloWorld project in ARM DS 2026.1 IDE.

Creating a new HelloWorld Project

File -> New -> Project

C/C++ -> C/C++ Project -> Next

Classic C project -> Next

New Classic C Project ->

Project name = "HelloWorld"

Project type -> Executable -> Hello World ANSI C Project

Toolchains -> Arm Toolchain for Embedded Professional -> Finish

Configuring the Build of a new HelloWorld Project

Project -> Properties -> C/C++ Build -> Configuration = "Debug \[Active]"

Project -> Properties -> C/C++ Build -> Settings -> ARM Toolchain for Embedded C
Compiler -> Target -> Target(--target)="aarch64-none-elf", CPU (-mcpu)= "Cortex-A53"

Project -> Properties -> C/C++ Build -> Settings -> ARM Toolchain for Embedded Assembler
-> Target -> Target(--target)="aarch64-none-elf", CPU (-mcpu)= "Cortex-A53"

Project -> Properties -> C/C++ Build -> Settings -> ARM Toolchain for Embedded Linker ->
Target -> Target(--target)="aarch64-none-elf", CPU (-mcpu)= "Cortex-A53"

Project -> Properties -> C/C++ Build -> Settings -> ARM Toolchain for Embedded Linker -> Miscellaneous -> Other flags="-Wl,--defsym=__boot_flash=0x80000000,--defsym=__flash=0x080001000,--defsym=__ram=0x080080000,-Map=linkmap.txt,--gc-sections -Tpicolibc.ld -nostartfiles -lcrt0-semihost-fvp -lsemihost -Wl"

Project -> Properties -> C/C++ Build -> Tool Chain Editor -> Current toolchain = "Arm Toolchain for Embedded Professional" Current Builder = "Gnu Make Builder"

Building a new HelloWorld Project

Project -> Clean Project

Project -> Build Project

Creating a Debug Script for a new HelloWorld Project

File -> New -> Other

Select a Wizard -> Arm Debugger -> Arm Debugger Script -> Next

New ARM Debugger Script -> Location = "\${workspace_loc:HelloWorld}", File name = "use_model_semihosting.ds" -> Finish

use_model_semihosting.ds = "set semihosting enabled off" -> Save

Creating a Model Connection to Debug a new HelloWorld Project

File -> New -> Model Connection

Debug Connection -> Debug connection name = "HelloWorld_FVP" -> Associate debug connection with an existing project = Project -> Next

Target Selection -> Arm FVP (Installed with Arm DS) -> Base_A53x1 -> Finish

Edit configuration and launch -> Connection -> Arm FVP (Installed with Arm DS) -> Base_A53x1 -> Bare Metal Debug -> Cortex-A53

Edit configuration and launch -> Connection -> Bare Metal Debug -> Launch a new model -> Model parameters = "-C cluster0.NUM_CORES=1 -C bp.secure_memory=false"

Edit configuration and launch -> Files -> Target Configuration -> Application on host to download = "\${workspace_loc:/HelloWorld/Debug/HelloWorld.axf}" -> OK

Edit configuration and launch -> Debugger -> Debug from symbol = "main" -> Run target initialization debugger script (.ds/.py) = "\${workspace_loc:/HelloWorld/use_model_semihosting.ds}" -> OK

Edit configuration and launch -> Debug

Reference

1. <https://support.arm.com/documentation/101469/2026-1/Tutorial--Hello-World/Create-and-configure-a-project-in-C-or-C--/Create-and-configure-a-project-in-C-with-Arm-Toolchain-for-Embedded-Professional?lang=en>
2. <https://support.arm.com/documentation/101469/2026-1/Tutorial--Hello-World/Configure-your-debug-session?lang=en>