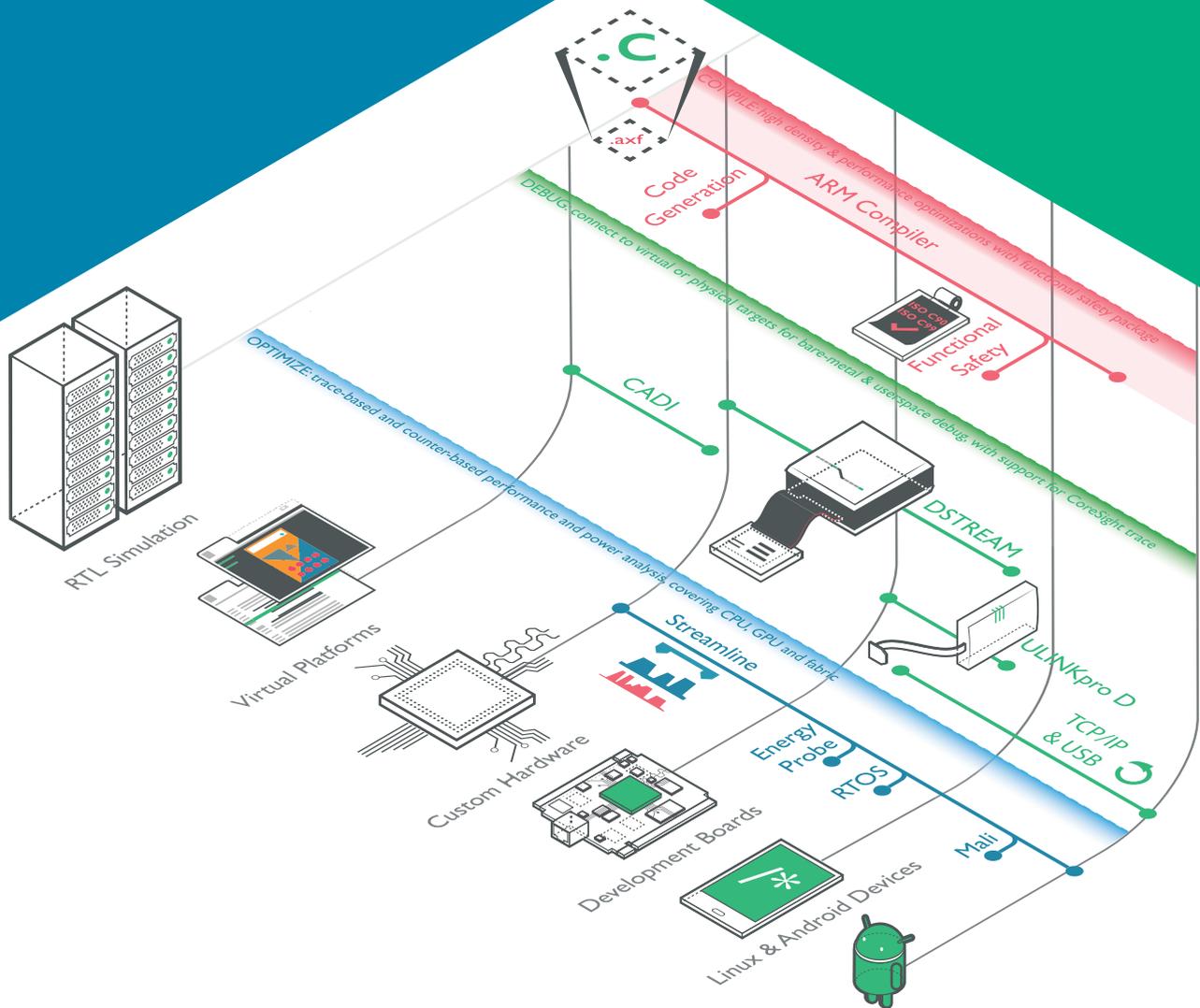


Arm DS-5 Development Studio

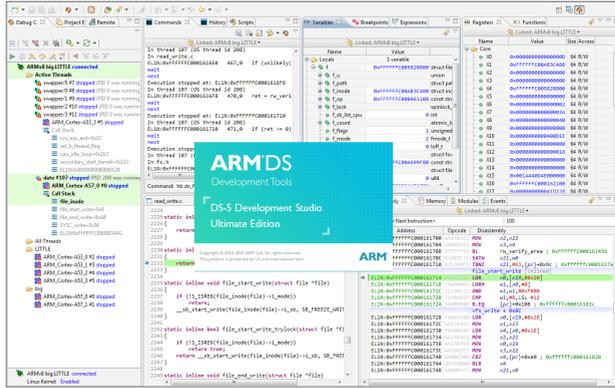
The most powerful Integrated Development Environment (IDE) for embedded Arm® systems.

developer.arm.com/ds-5



arm DS

Arm DS-5 Development Studio



Arm DS-5 Development Studio - An end-to-end suite of tools for embedded C/C++ software development on any Arm-based SoC

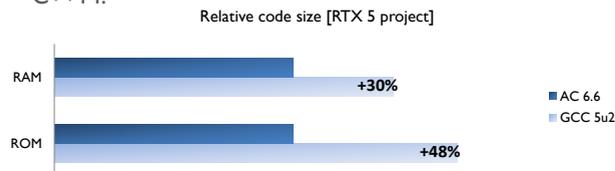
- Support for all Arm processors
- Industry leading **C/C++ compilation tools**
- Powerful OS-aware multicore **debugger**
- Debug support for all phases of development including bootloader, kernel and user space
- **Streamline performance analyzer** for system-wide profiling based on performance counters
- Powerful **C/C++ editor and project manager** based on Eclipse
- **Fast simulator** for software development on the host computer with typical speeds above 250 MHz
- Technical support from Arm experts

Arm C/C++ Compiler

The result of over 25 years' investment in compiler technology, the Arm Compiler embedded toolchain has been used to build ultra-efficient C/C++ code shipping in billions of Arm-based devices on the market.

Key advantages:

- Developed alongside Arm architecture for most efficient code generation for Arm processors
- Best-in-class code size using link-time optimization and Arm C microlib library
- Performance tuning for real-world embedded applications, not simple benchmarks. Up to 38% faster than v5.06
- Certified by TÜV SÜD for use in functional safety applications up to the highest integrity levels
- Support for the newest language standards like C++11 and C++14.



DS-5 Debugger

The DS-5 Debugger builds on the most advanced Arm technologies, such as Arm CoreSight™ Debug and Trace, to equip developers with a flexible debug solution for tasks from hardware bring-up and OS porting to application development.

Key advantages:

- Pre-configured support for a large range of Arm based devices
- Platform Configuration Editor (PCE) to bring-up a new SoC in a simple and flexible way
- Full task-aware debug, offering individual run control and breakpoints for specific tasks or threads
- Full multi-processor support, allowing you to simultaneously control all Arm devices in your system
- Cycle accurate non-intrusive instruction and data trace
- Linux kernel and user space debug, including context awareness and control of individual processes and threads
- Visibility into RTOS internal data structures such as interrupts, semaphores and task queues.

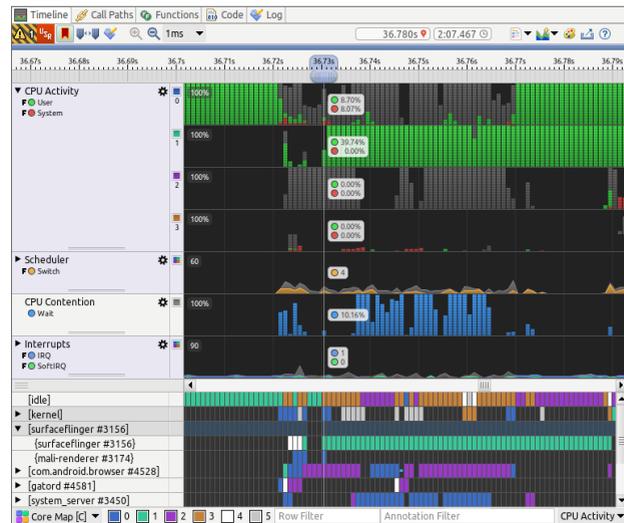
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Streamline

The Arm Streamline performance analyzer is a system-wide performance analysis tool to analyse Linux, Android and bare-metal embedded systems. Through a lightweight agent running on the target, Streamline captures the target's performance information from the CPU, GPU and OS.

Key advantages:

- Per core visualization of performance metrics and thread activity for optimal code parallelization
- System wide performance counter analysis enabling developers to easily identify performance bottlenecks, multi-threading issues and inefficient resource usage
- Correlation between software execution and power consumption data
- Analysis of hot spots down to the source and disassembly level
- Flexible filtering capabilities to restrict the data set under analysis (e.g. per thread, in a particular time slice, etc).



DSTREAM family

The Arm DSTREAM family of high-performance debug and trace units enable powerful software debug and optimization on any Arm-based hardware target.

The probes allow DS-5 Debugger to connect to the SoC via JTAG (speeds up to 200MHz) or Serial-Wire Debug. It delivers high download speeds (up to 16MBytes/s) and fast stepping through code on single and multi-core devices.

The DSTREAM family offers varying capabilities to provide the optimum solution for any SoC or particular use case. Trace capabilities vary from narrow-port (4 pin) parallel streaming trace captured on a host PC, to wide-port (16 pin) parallel trace stored on large built-in trace buffers.

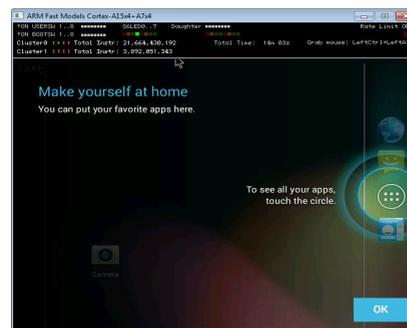


For a comparison see: developer.arm.com/debug-probes

Fixed Virtual Platforms

Develop bare metal and Linux software without a hardware target using Fixed Virtual Platform (FVP).

FVP is a fast simulation model of an Arm-based SoC with processor, memory, and peripherals required to run complex operating systems and user applications.



FVPs run at speeds comparable to the real hardware and significantly cut your development time.

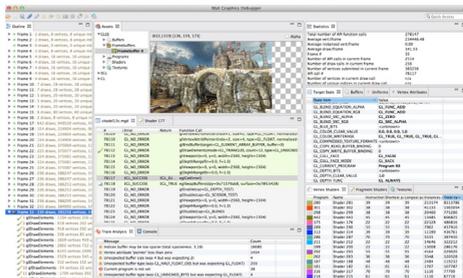
DS-5 ships with sample FVPs and example projects to kickstart your development.

Mali Graphics Debugger

The Arm Mali™ Graphics Debugger is an API level tracer for OpenGL® ES 2.0, 3.x, Open CL™ and Vulkan®. As the Mali Graphics Debugger intercepts all calls it is in the unique position to help the user analyse their application and pinpoint areas for optimization.

Key advantages:

- Render frames drawcall by drawcall and inspect scene compositions
- Record application assets to see textures, framebuffers and shaders
- Inspect shader cycle count performance statistics.



Getting started

You can find step-by-step tutorials, product documentation and videos on developer.arm.com to get you started with DS-5 in almost no time.

Follow the **Getting Started with DS-5** online tutorial to download and install DS-5, setup a license, write your first program, compile and run it on a FVP.

Evaluation

Download the latest version of DS-5 Ultimate Edition from developer.arm.com/ds-5/downloads and evaluate all the features for 30 days.

Sample code

DS-5 comes with extensive code examples that include bare-metal startup code, Linux kernel and application debug and Streamline usage amongst others.

Arm technical support

Arm expert technical support is available to customers with a support and maintenance contract. Visit developer.arm.com/support for more information.

Product Edition	Ultimate	Professional*
Compiler	✓	✓
Arm Compiler for embedded	✓	✓
Compiler qualification kit for functional safety	✓	
Compiler extended maintenance	✓	
Debugger	✓	✓
Fixed Virtual Platform	✓	✓
Streamline	✓	✓
Mali Graphics Debugger	✓	✓

* DS-5 Professional Edition supports a subset of ARM cores. Please visit our website to see the list of cores supported.

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Program examples and detailed technical information are available from your distributor and our web site (developer.arm.com).

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