

DS-5

Development Studio 5



Overview

The ARM® Development Studio 5 (DS-5™) is the complete suite of software development tools for ARM processor-based ASICs and standard devices. DS-5 accelerates your software development by providing an easy-to-use, integrated, and validated toolchain.

Key Features and Benefits

- Support for all ARM processors.
- Integration with the industry-standard Eclipse IDE, which provides a large ecosystem of 3rd party plug-ins.
- Flexible C/C++ editor and project manager.
- Powerful C/C++ compilation tools.
- Debugger supports all phases of development from bootloader to kernel, and user space.
- Streamline Performance Analyzer provides system-wide profiling based on performance counters.
- Instant correlation of performance-bottlenecks (e.g. cache misses, interrupts) and software execution.
- Fast simulator for ARM software development on the host computer with typical speeds above 250 MHz.
- Support and maintenance contract for one year.

DS-5 Debugger

The DS-5 Debugger brings together the convenience and productivity of integrated embedded development tools with the power and flexibility of open source tools for Linux and Android™.

The DS-5 debugger provides:

- Debug of code generated by ARM and GNU Compiler.
- Advanced Session Control and SystemViews control multiple simultaneous debug sessions, to one or more targets, from one debugger perspective.
- Run and stop mode debugging of single core and multicore devices.
- Linux kernel and user space debug, including context awareness, process, and threads.
- Non-intrusive instruction trace including summarized profile.
- Conditional and scripted breakpoints.

For expert Linux users, DS-5 includes the traditional GDB command line interface for detailed control of target interactions and flexibility with scripting advanced debugger functions.

DSTREAM

The ARM DSTREAM™ high performance debug and trace unit enables powerful software debug and optimization on any ARM processor-based hardware target.

DSTREAM enables the connection of DS-5 Debugger to ARM processor-based devices via JTAG or Serial-Wire Debug. It uses FPGA acceleration to deliver high download speeds and fast stepping through code on single and multi-processor devices and enables:

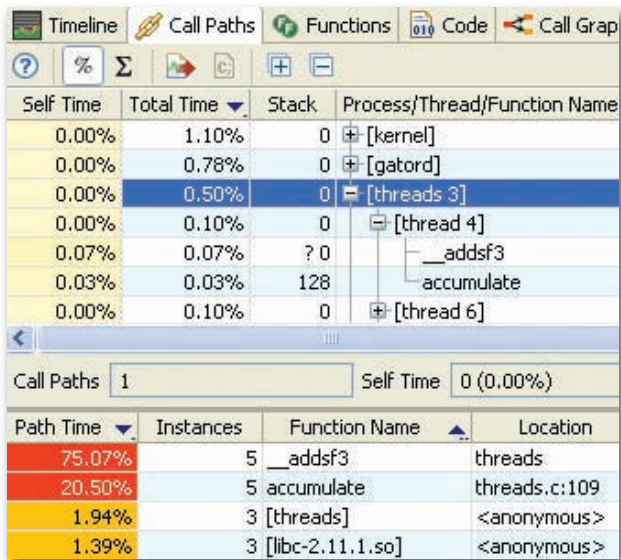
- Run control debug and trace unit supporting all ARM processors.
- USB 2.0 and Ethernet interface allows direct and remote connections from the host PC.
- Code download at speeds of up to 2500 KBytes per second.
- JTAG clocks of up to 60 MHz provide fast software upload over the existing debug port.
- 16-bit wide trace capture at 300 MHz DDR (600 Mbit/s per pin)
- Flexible trace clock positioning (relative to trace data).
- Large 4GB trace buffer enables long-term trace of fast targets.



Streamline

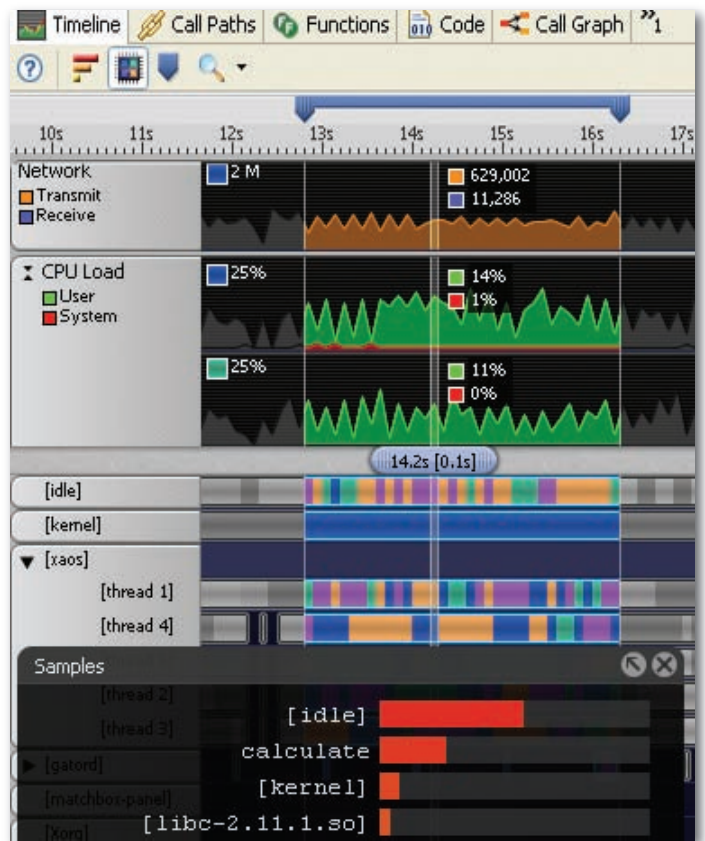
Streamline is the Linux and Android performance analysis tool in DS-5. Through a small driver running on the target, Streamline captures the target's performance information and displays it in an easy to understand graphical interface. Streamline includes:

- Intuitive display of information ranging from system-wide performance counters to hot spots in the source code, making it easy for developers to identify performance bottlenecks, multi-threading issues and general inefficient resource usage.
- Visualization tools to analyze per core performance metrics with threads and processes for optimal synchronization and concurrency of target's resources.
- Filtering capabilities to restrict the data set used by statistical reports over time and per process, thread or call path.
- Call paths view shows the processor time spent on each call tree. A flat report is generated for the selected call path, which enables you to focus the analysis of a process or thread.
- Code View highlights the hot spots within a function by displaying the processor time spent on each line of source code and on each disassembly instruction.
- Streamline Capture Options dialogue enables you to select the right balance between granularity and information detail, and intrusiveness.



Call paths view shows the processor time spent on each call tree.

A flat profiling report is generated for the selected call path, which enables you to focus the analysis on a process or thread.



Timeline view shows process and thread information over time, matched to SoC performance counters. This enables you to spot thread deadlocks and inefficiencies, as well as hot spots in time.

ARM C/C++ Compiler

The ARM Compiler in DS-5 Professional Edition is the only commercial compiler co-developed with the ARM processors and specifically designed to optimally support the ARM architecture. It is the industry standard C and C++ compiler for building applications targeting the ARM, Thumb®, Thumb-2, VFP, and NEON™ instruction sets found in the newer Cortex™ processor-based devices.

- ARM processors are designed to best execute code generated by the ARM Compiler.
- The ARM Compiler enables the new features in all the ARM processors.
- Supports building of Symbian OS, ARM Linux, and Android native applications and libraries, as well as bare-metal applications and all major RTOS.

www.arm.com/ds5

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