RealView® Tools by ARM®

RealView Tools by ARM

Tools that Span the Complete Development Process

RealView® tools by ARM® are unique in their ability to provide solutions that span the complete development process from concept to final product deployment. Each member of the RealView portfolio has been developed closely alongside IP, ensuring that it maximizes the IP's performance.

RealView Development Suite ▸

RealView Development Suite is the only complete, end-to-end solution for software development that supports all ARM® processors and ARM debug technology. These tools offer the highest-performance ARM C/C++ compilers and support the most advanced debug technology available today for bringing up the latest SoC and ASIC designs.

Proven to deliver the highest return for the lowest risk on their ARM-based ASICs, SoC, and FPGA designs, the RealView Developer Suite is a trusted source for ARM development solutions. Today, the majority of the four billion ARM-Powered™ devices worldwide have software created with RealView tools. Investing in the RealView solution is the clear choice for a safe, reliable, and high-performance design.

New Features of RealView Development Suite 3.1 ▸

- Microlib C run-time library, optimized for minimum code size
- Intrinsics support for ARM DSP instruction set extensions, ETSI functions and TI C55x DSPs
- Enhanced support for the ARM CoreSight™ on-chip debug and trace technology, which enables multiple trace streams and reduced pin count for debug and trace
- Performance improvements and tuning for ARM processor support, including enhanced optimization for the complete Cortex™ family of processors, including the Cortex-M1 processor, the first ARM processor designed for implementation in FPGA
- Support for the ANSI C99 language standard
- Enhanced Eclipse project management, including automatic configuration of the RealView tools for the chosen ARM processor and development board

RealView Development Suite Professional ▸

The ARM RealView Development Suite 3.1 Professional is a complete, end-to-end solution for software development supporting all ARM processors and ARM CoreSight™ debug technology. This full-featured product enables developers to begin software development, optimization and test ahead of silicon availability, significantly reducing application time-to-market and ensuring the highest degree of software quality.

RealView Development Suite 3.1 Professional incorporates the best-in-class RealView Compilation tools and market-leading RealView Profiler enabling applications to easily achieve both high performance and optimal code size. The product includes support for the latest Cortex™-A8 processor and includes vectorizing compilation for the NEON™ media processing engine which can increase the performance of multimedia applications in standard C code by more than 200 percent.

Eclipse Plug-ins for RealView Development Suite ▸

RealView Development Suite integrates with the open-source Eclipse IDE. This integration combines Eclipse's outstanding source code development tools and plug-in framework with the best-in-class compilation and debug technology in the RealView DEVELOP family of tools. The RealView Eclipse Plug-in enables developers to use Eclipse as a project manager to create, build, debug, and manage C and C++ projects for ARM targets. The plug-in provides project stationery to simplify the creation of ARM, Thumb®, and ARM/Thumb architecture-based projects, and provides comprehensive configuration panels to specify options for the RealView Development Suite.

Compilation Tools ▸

The compilation tools in RealView Development Suite are recognized by the industry for providing the best performance of all available ARM-processor targeted compilers. Developed and tuned to deliver the tightest code density, the compilers produce significantly smaller executables than other leading tool suites. The compilers generate optimized code for the 32-bit ARM and 16-bit Thumb and Thumb-2 instruction sets and support full ISO standard C and C++.

For more information on Arrow's Development Tools, pricing and availability, **visit www.arrowdevtools.com** or call **1-866-910-3650**.

Debug Tools ▸

Designed from the ground up to support complex single- and multi-core SoC software development with Embedded OS, the debugger in RealView Development Suite sets the standard for creating and debugging deeply embedded applications. No other debug environment provides interconnectivity with both the RealView CREATE world of system-level modeling and the RealView DEVELOP world of software development.

Add-on Options ▸

Available add-on options to the RealView Development Suite:

- RealView ICE and RealView Trace
- Real-Time System Model (RTSM) for ARM1176JZ(F)-S
- Eclipse IDE plug-in
- Plug-ins for popular DSP support

Supported Platforms ▸

- Windows 2000, XP Professional
- Red Hat Enterprise Linux 3 and 4
- SPARC Solaris 9 and 10

RealView ICE ▸

RealView ICE is ARM's leading-edge JTAG run control hardware unit, delivering the high performance required by today's developers working with sophisticated System-on-Chip (SoC) devices and large software images. It provides a universal-ARM solution, i.e., one unit supports all ARM CPUs in single, multi-core, homogenous, and heterogeneous architectures, offering an unparalleled depth and breadth of support for ARM processor-based devices.

RealView ICE is an essential tool in an ARM system debug environment for connection and access to devices that contain the EmbeddedICE® logic, Embedded Trace Macrocell™ (ETM™), and Embedded Trace Buffer (ETB™) components for on-chip trace data storage. The unit has the ability to be expanded with additional modules for extended functionality, such as RealView Trace for trace data capture.

The recently released RealView ICE version 3.0 now enables customers to connect to the new ARM Cortex family of processors and devices containing the new CoreSight™ advanced debug and trace technology. RealView ICE and Trace fully complement the RealView Development Suite in providing best-in-class integrated tools for hardware/software co-development of optimized ASIC, SoC, and FPGA-based systems.

Other New Features ▸

- JTAG run control for the new Cortex™-A8 and Cortex-M3 processors
- CoreSight DK11 run control support for the ARM1136, ARM1156, and ARM1176 processors
- TrustZone® secure and non-secure code views for the Cortex-A8 and ARM1176 processors

RealView ICE can be connected to most types of host platforms by Ethernet for extended and remote connection, or locally by USB, to provide the optimum debug coupling and performance with the RealView Debugger.

Main Features ▸

- High-performance debug control
- Code download up to 1300 KB/s with the RealView Debugger
- High-speed single-stepping; up to 100 steps/sec
- JTAG Debug Communications Channel (DCC) support
- JTAG clock frequencies, 2 kHz to 20 MHz or 50 MHz (LVDS cable)
- Very low JTAG clock frequencies (sub-1 kHz)
- Wide target-voltage support, from 1.0V to 5.0V
- Tightly coupled, synchronized multi-core control
- ETM trace data capture with plug-in RealView Trace module
- ETB trace data access via the JTAG port
- Debug using GDB and KGDB capability
- USB 1.1 and 2.0 compatible connection (Windows platform only)
- Ethernet 10/100baseT remote and local host connection

RealView Trace ▸

RealView Trace interfaces with ARM on-chip trace data storage Embedded Trace Macrocell (ETM™) components for the ARM7™, ARM9™, ARM9E™, ARM10™, and ARM11™ core families, and in conjunction with RealView Debugger. It provides non-intrusive real-time tracing of instructions, data and profiling for performance analysis. It's an optional add-on expansion module for RealView ICE.

Supported ARM Processors ▸

RVI supported cores: ARM7, ARM9(E), ARM10, ARM11, and Cortex.

Main Features ▸

- Non-intrusive real-time tracing of instructions and data up to 250 MHz trace clock
- Up to eight million frames deep trace buffer (up to four million frame deep buffer with time stamps)
- 4-/8-/16-bit data width trace port
- Trigger synchronization with external events
- Fully variable trigger position
- Fast on-the-fly trace data upload
- Shares RealView ICE connection to the host computer
- ETM trace ports modes supported
  - ETM protocols v1.x, v2.x, v3.x for ETM7TM, ETM9TM, ETM10TM, and ETM11TM
  - Single and doubled-edged clocking
  - Normal and multiplexed ports
- Time stamp (48-bit) 10 ns resolution with 32-day duration