

IAR Embedded Workbench® for ARM

IAR Embedded Workbench is a set of highly sophisticated and easy-to-use development tools for embedded applications. It integrates the IAR C/C++ Compiler™, assembler, linker, librarian, text editor, project manager, and C-SPY® Debugger in an integrated development environment (IDE). With its built-in chip-specific code optimizer, IAR Embedded Workbench generates very efficient and reliable FLASH/PROMable code for ARM devices. In addition to this solid technology, IAR Systems also provides professional world-wide technical support.

MODULAR AND EXTENSIBLE IDE

- A seamlessly integrated environment for building and debugging embedded applications
- Powerful project management allowing multiple projects in one workspace
- Build integration with IAR visualSTATE
- Hierarchical project representation
- Dockable and floating windows management
- Smart source browser
- Tool options configurable on global, group of source files, or individual source files level
- Multi-file compilation support for even better code optimization
- Flexible project building via batch build, pre/post-build or custom build with access to external tools in the build process.
- Integration with source code control systems

EXTENSIVE DEVICE SUPPORT

- Core support for all ARM devices with ARM7, ARM7E, ARM9, ARM9E, ARM10E, ARM11, SecurCore, Intel® XScale, Cortex-M1 and Cortex-M3 core families
- Ready-made peripheral register definition files for devices from Actel, Analog Devices, ARM, Atmel, Cirrus Logic, Freescale, LogicPD, Luminary, Micronas OKI, NXP, Phytex, ST, Texas Instruments (Luminary), Toshiba and others
- Flash loaders for most devices and evaluation boards
- Over 1400 example projects

HIGHLY OPTIMIZING C/C++ COMPILER

- Support for C, EC++ and extended EC++ including templates, namespace, standard template library (STL) etc.
- ARM Embedded Application Binary Interface (EABI) and ARM Cortex Microcontroller Software Interface Standard

(CMSIS) compliant

- Interoperability and binary compatibility with other EABI compliant tools
- Automatic checking of MISRA C rules
- Language extensions for embedded applications with target-specific support
- Support for ARM, Thumb1 and Thumb-2 processor modes
- Support for the VFP9-S floating-point co-processor
- Support for 4 Gbyte applications in all processor modes
- Support for 64-bit long long
- Reentrant code
- 32- and 64-bit floating-point types in standard IEEE format
- Multiple levels of optimizations on code size and execution speed allowing different transformations enabled, such as function inlining, loop unrolling etc.
- Advanced global and target-specific optimizer generating the most compact and stable code

STATE-OF-THE-ART C-SPY® DEBUGGER

- Cortex-M3 SWV/SWO debugger support
- Complex code and data breakpoints
- User selectable breakpoint types (hardware/software)
- Unlimited number of breakpoints in flash via optional J-Link hardware debug interface
- Runtime stack analysis - stack window to monitor the memory consumption and integrity of the stack
- Complete support for stack unwinding even at high optimization levels
- Profiling and code coverage performance analysis tools
- Trace utility with expressions, such as variables and register values, to examine execution history
- Versatile monitoring of registers, structures, call chain, locals, global variables and peripheral registers
- Smart STL container display in Watch window



- Symbolic memory window and static watch window
- I/O and interrupt simulation
- True editing-while-debugging
- Drag and drop model
- Target access to host file system via file I/O

C-SPY DEBUGGER TARGET SYSTEM SUPPORT

The C-SPY Debugger for the ARM core is available with drivers for the following target systems:

- Simulator
- Emulator (JTAG/SWD)
 - IAR J-Link probe, JTAG and SWD support, connection via USB or TCP/IP server
 - RDI (Remote Debug Interface), such as Abatron BDI1000/2000 Ashling Opella, Ashling Opella-XD, EPI Majic, Signum JTAGjet, ARM Multi-ICE
 - Macraigor JTAG interfaces: Macraigor Raven, Wiggler, mpDemon, usbDemon, usb2Demon and usb2Sprite
 - ST ST-LINK JTAG debug probe
- ROM-monitor
 - IAR ROM-monitor for the IAR KickStart Kit for NXP LPC210x, Analog Devices and OKI evaluation boards
 - Angel debug monitor for boards from Atmel, Cirrus Logic etc.
- IAR J-Trace probe

RTOS SUPPORT

Built-in plugins:

- IAR PowerPac
- CMX-RTX/Tiny+
- Micrium μ C/OS-II
- OSE Epsilon
- OSEK (ORTI)
- Segger embOS
- ThreadX RTOS

Vendor plugins:

- eSys Tech X Realtime kernel
- NORTi MiSPO
- Micro Digital SMX
- Quadros RTXC
- Unicoi Fusion

IAR ASSEMBLER

- A powerful relocating macro assembler with a versatile set of directives and operators
- Built-in C language preprocessor, accepting all C macro definitions

IAR ILINK LINKER

- Complete linking, relocation and format generation to produce FLASH/PROMable code
- Flexible commands allowing detailed control of code and data placement
- Optimized linking removing unused code and data
- Direct linking of raw binary images, for instance multimedia files
- Comprehensive cross-reference and dependency memory maps
- Link compatibility with object files and libraries generated by other EABI compliant tools

IAR products are distributed and supported by

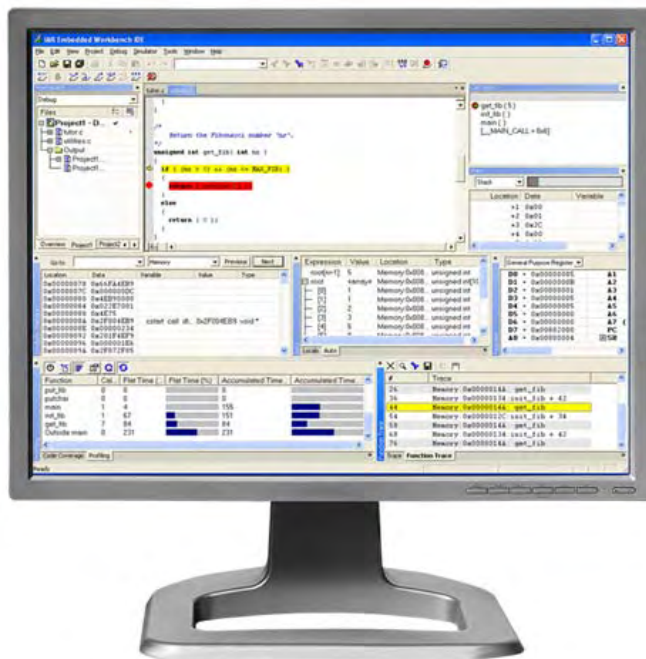
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IAR LIBRARY AND LIBRARY TOOLS

- All required ISO/ANSI C and C++ libraries and source included
- All low-level routines such as writechar and readchar provided in full source code
- Lightweight runtime library, user-configurable to match the needs of the application; full source included
- Library tools for creating and maintaining library projects, libraries and library modules
- Listings of entry points and symbolic information

COMPREHENSIVE DOCUMENTATION

- Perfect-bound user guides with detailed information
- Efficient coding hints for embedded application
- Extensive step-by-step tutorials
- Context sensitive help and hypertext versions of the user documentation available online

FREE EVALUATION SOFTWARE

Free evaluation softwares—32KB KickStart and 30-day evaluation versions are available at <http://www.arcadisystems.com/iar>

For the latest product news, up-to-date device support list, hardware debugger support and related products etc, please visit <http://www.arcadisystems.com/iar>