

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, Aiji Systems, ARM, Atmel, Cirrus Logic, Freescale, Keil, LogicPD, Luminary, Micro nas, Nohau, OKI, Olimex, Pasat, NXP, Phytex, ST, Texas Instruments and Toshiba etc.
- 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 license for J-Link
- 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 & BDI2000, EPI Majic, Ashling Opella, Aiji OpenICE, 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 Philips LPC210x, Analog Devices and OKI evaluation boards
 - Angel debug monitor for boards from Atmel, Cirrus Logic etc.
- IAR J-Trace probe

RTOS SUPPORT

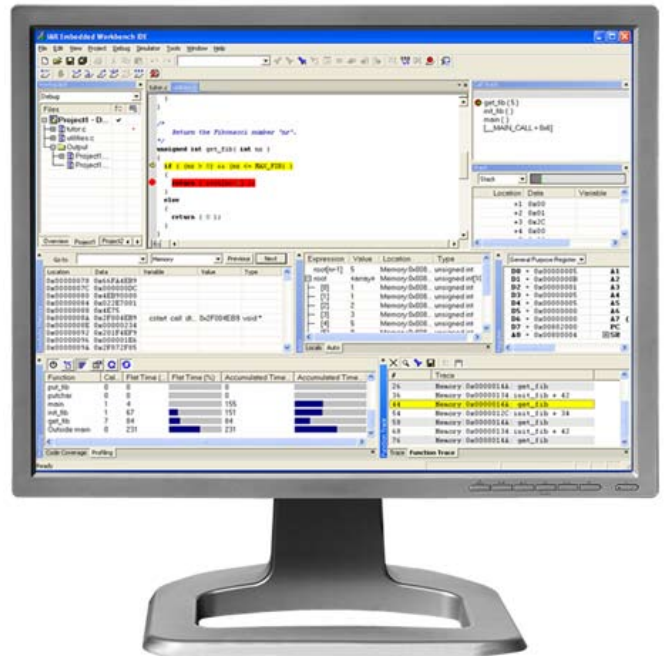
- | | |
|-------------------------|-------------------------------|
| Built-in plugins: | Vendor plugins: |
| • IAR PowerPac | • eSys Tech X Realtime kernel |
| • CMX-RTX/Tiny+ | • NORTi MiSPO |
| • Micrium μ C/OS-II | • Micro Digital SMX |
| • OSE Epsilon | • Quadros RTXC |
| • OSEK (ORTI) | • Unicoi Fusion |
| • Segger embOS | |
| • ThreadX RTOS | |

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 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.iar.com/ewarm>

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

www.iar.com

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