

IAR C-SPY Plugin SDK for Emulators, RTOSs and Middleware



From Idea to Target

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An integrated workflow is a key decision factor when today's embedded systems developer looks for tools—a chain of powerful development and implementation applications that work so well together that you don't have to toggle between them. More and more often, it is integrated and flexible solutions that determine the attractiveness of a product. If you integrate your product with a well-known and popular debugger, you give your users access to a whole range of useful features they can use without interrupting the workflow.

This integration comes easy with the new IAR C-SPY Plugin SDK, which puts the power of the entire IAR C-SPY Debugger—an integrated part of the IAR Embedded Workbench IDE—into your hands. From your perspective, you can focus on your core technology, and benefit from the extensive technology created by IAR, embodied in the IAR Embedded Workbench.

User Benefits

More and more users prefer integrated solutions, for very good reasons. Not only do they save time and energy, integrated solutions also avoid “near compatibility” situations when different tools can *almost* be used together but not without time-consuming, complicated workarounds. A plugin to C-SPY bridges the gap between the different tools required during the development process:

- Integrated workflow between editor/compiler/build tools and emulator/RTOS/middleware
- Several tools accessible from one single user interface
- Synergy effects; each individual tool is better utilized when it is integrated to fit the developer's workflow
- Integrated solutions from cooperating vendors make users confident about product compatibility and stability
- Decreased learning curve; familiarity with one development environment.

Seamless tool integration

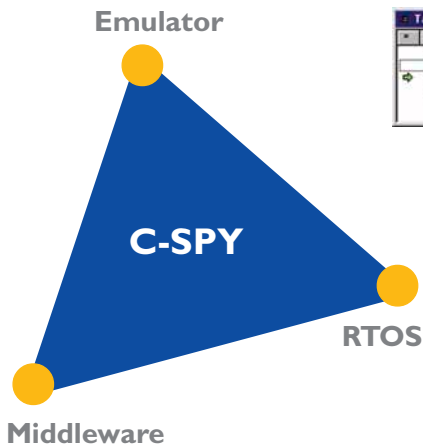
The IAR C-SPY Plugin SDK is designed for easy tool integration, with generic components, libraries, templates and ready-made projects. It is suitable for different types of applications such as emulator interfaces, RTOSs, TCP/IP, Network Stack, and CAN-

aware modules. It is both flexible and scalable—you can use the SDK for seamlessly integrating small plugins with only a few features as well as for very advanced solutions with a multitude of customized dialogs or special breakpoint types.

IAR Embedded Workbench IDE

The IAR Embedded Workbench is an easy-to-use, powerful Integrated Development Environment for embedded systems. Based on solid technology, it seamlessly integrates the IAR C/Embedded C++ compiler, assembler, editor and project manager, linker, librarian and IAR C-SPY Debugger into a comprehensive toolkit, recognized for its efficient code generation and unique debugging properties. It is built on an open architecture and can easily be extended by adding plugin modules so that embedded developers can benefit from integrated solutions, especially when debugging.

The IAR C-SPY Debugger, an important part of the IAR Embedded Workbench IDE, is a state-of-the-art debugger for developing embedded applications. It comes with a multitude of advanced features such as fine-grain smart-stepping, versatile monitoring of registers, structures, call chain, variables and peripheral registers, tracing, advanced code and data breakpoints, a powerful macro system, profiling, code coverage and access to host file system via file I/O.



NAME/ID	Prio	State	saved_ptr	trig	E-Flags	E-Match
0x001001dc	0	WONE	0x00000000	0	0x0000	0x0000
Main task	3	WAIT MSG	0x00102514	1	0x0000	0x0000
Prime task A	5	RUNNING	0x00102108	1	0x0000	0x0000
Prime task B	6	RESUME	0x00101d04	1	0x0000	0x0000
NO TASK						

Variable	Value	Description
RTC_SCALE	1	Systems RTC Scale
TSLICE_SCALE	4	Systems Time Slice Scale
SLICE_ON	0	Time Slicing on/off (0 = off)

Mailbo...	# of Messages	Task waiting	Task to signal	Event
0	0	0x0010020c	None	0
1	0	None	None	0
2	0	None	None	0
3	0	None	None	0
4	0	None	None	0

- Ready-made examples
- Templates—“insert your code here”
- Utility modules such as general purpose windows
- Ready-to-build sample projects
- Step-by-step implementation recipes
- API reference documentation in HTML format.

You can minimize your development efforts by using these templates and sample projects, but you can also extend the system, for example by adding your own dialogs and breakpoint types such as trigger points and probe points.

Since the IAR Embedded Workbench supports a wide range of 8-, 16-, and 32-bit architectures such as ARM, Atmel AVR, TI MSP430, Mitsubishi M16C and many others, the SDK has been designed for easy reuse of code. The effort to port a plugin to a different architecture is therefore typically very small or even non-existent.

To all this, add flexible product packing and distribution alternatives—plugins to C-SPY can be included in the IAR Embedded Workbench or distributed as add-ons via your regular channels.

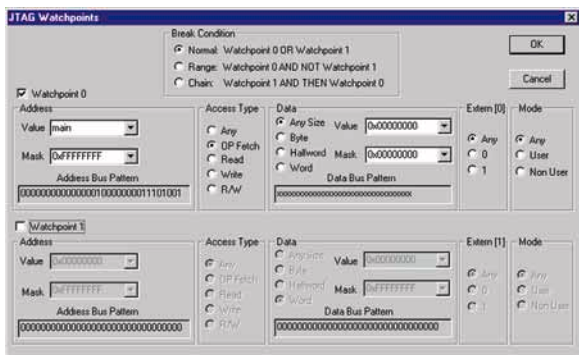
Teaming up with IAR Systems

IAR Systems is a leader in the embedded development tools market. Integrating your development tool with our product line is an efficient way for you to strengthen product promotion and enhance your business by getting access to IAR customers all over the world:

- Seamless integration into a graphical development environment
- Full access to the entire C-SPY debugger functionality
- IAR’s compiler technology and rich debug formats provide unique debugging granularity
- The IAR brand is strong, thanks to leading-edge compiler and optimization technology
- Support for many 8-, 16-, and 32-bit architectures
- Large worldwide customer base in leading industries such as telecom, automotive and consumer electronics
- Access to the IAR Systems marketing and distribution channels
- IAR Systems’ suites of target-specific development tools cover all phases from system design to code generation, compiling and debugging.

Emulator Plugins

For an emulator interface, you would typically use the IAR C-SPY Plugin SDK to create custom features such as configuration dialogs, support for hardware breakpoints and tracing functionality. All debugging features will be coherent for the users; they will be using one integrated debugger!



RTOS Plugins

The IAR C-SPY SDK can also be used to create RTOS kernel awareness within the IAR C-SPY Debugger. This gives your users a unique window into the RTOS, allowing them to see the task lists and focus their debugging on a specific task, set task-specific breakpoints and execute task-specific steps. Various “inspector windows” display the contents of the RTOS’s internal data structures, such as timers, queues, semaphores, resources and mailboxes.

Integrating with C-SPY

The IAR C-SPY Plugin Software Development Toolkit gives you full access to the entire C-SPY debugger functionality. The SDK has been carefully designed; developing an IAR C-SPY plugin module is a matter of days or weeks, even if you are new to Windows programming. The toolkit comes with extensive and well-structured documentation and examples to give you a quick start:

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Ericsson Mobile Platforms	Samsung
Enea/OSE	Segger
Express Logic	Sharp
FS2	Sigum
Hitachi	Sony Ericsson
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Please contact partners@iar.se to discuss how your tool can be integrated with our product line!



From Idea to Target

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