Factsheet

TimeWeaver for ARM

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TimeWeaver estimates the worst-case execution times of tasks by combining local timing information from instruction-level traces with a global static worst-case path analysis. The resulting time bounds are valuable for soft real-time systems and provide feedback for optimizing worst-case performance.

Key benefits

TimeWeaver gives detailed information about the execution time and time-critical paths, including

- global end-to-end time, based on the maximum observed trace segment times combined to an overall bound,
- end-to-end bounds for specific functions, depending on trace points,
- coverage of the control-flow graph by the input traces,
- maximum possible and maximum observed iteration counts for loops,
- time variance of each trace segment over all traces.

TimeWeaver offers a powerful user interface, with fully integrated graphical and textual viewers for control flow, analysis results, source code, assembly code, and configuration files. You can:

- interactively explore analysis results,
- save and restore analysis scenarios,
- export customizable reports for documentation and certification purposes,
- start all analyses from the same GUI and handle all the tools with the same look and feel.

Supported compilers

- ARM Developer Suite C/C++ compiler
- CompCert C Compiler
- GNU C/C++ Compiler (GCC)
- Green Hills C/C++ Optimizing Compiler
- IAR C/C++ compiler

- Keil MDK-ARM C/C++ compiler suite
- LLVM/Clang based ARM compilers such as the HighTec compiler
- Tasking C/C++ compiler
- Texas Instruments C/C++ compiler
- Wind River Diab C/C++ compiler

Supported processor derivates

TimeWeaver/ARM works for all boards equipped with processors that are able to emit ETM program trace messages. For example, the following boards support such trace messages:

- Xilinx Zynq UltraScale+ (Cortex-A53 and Cortex-R5 cores)
- Texas Instruments TMS570LC4357 (Cortex-R5 core)

System requirements

- Windows: x86-64 Windows 10 or newer
- Linux: x86-64 CentOS/RHEL 7 or compatible
- 4 GB of RAM (16 GB recommended)
- 4 GB of disk space

Also available

The following AbsInt products are also available for this target:

- aiT
- StackAnalyzer
- TimingProfiler
- ValueAnalyzer

More information

- Visit our website: www.absint.com
- Speak with a product specialist: call +49 681 383 600

About AbsInt

AbsInt provides advanced development tools for embedded systems, and tools for analysis, optimization and verification of safety-critical software. Our customers are located in more than 40 countries worldwide. We have distribution agreements with major software distributors in Asia, North America, Middle East, and throughout Europe.

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