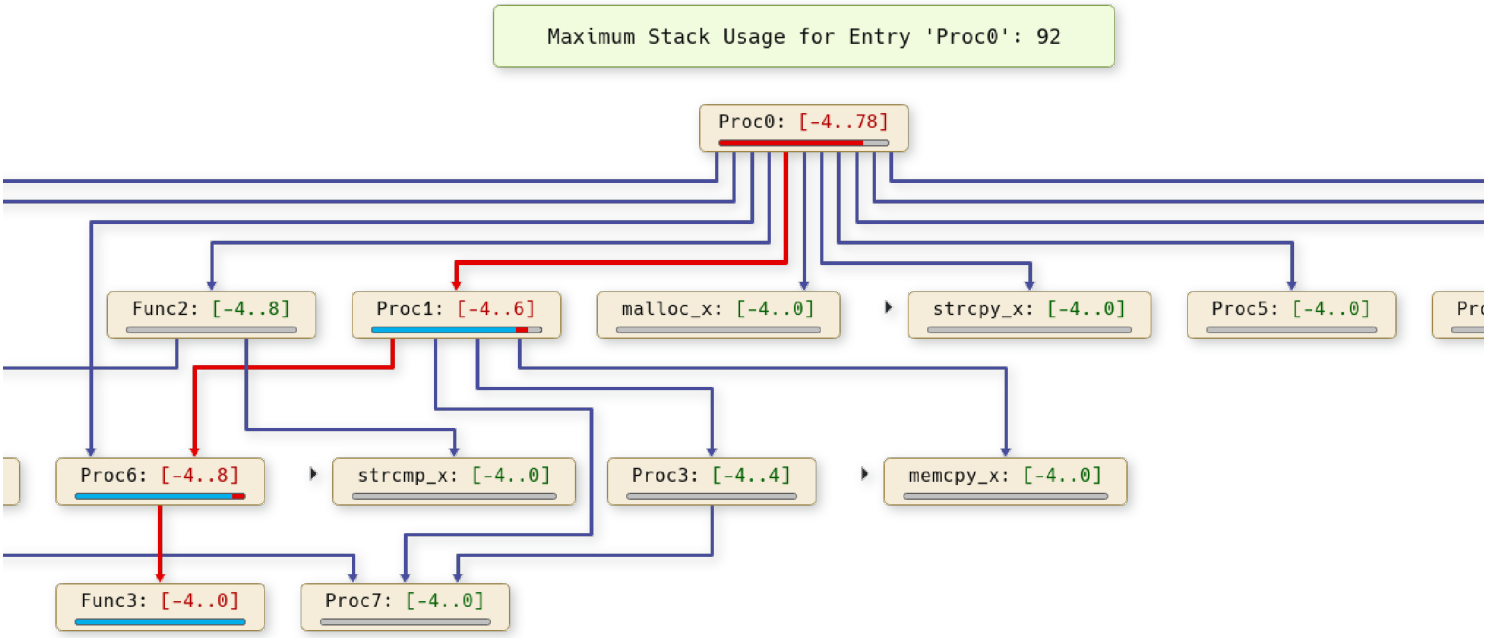
Static stack-usage analysis for dsPIC

StackAnalyzer for dsPIC automatically determines the worst-case stack usage of the tasks in your application. The analysis results can be interactively explored, or exported for documentation and certification purposes.



Key features

- Static analysis of binary files, exactly as they are executed in the final system.
- Clear and precise information on the worst-case stack usage by tasks, routines, basic blocks, and individual instructions.
- Recursions, function pointers, inline assembly code, and library-function calls are all taken into account.
- Automatic recognition of dead code.
- Feature-rich GUI with graphical and textual views for analysis results, control flow, source code, assembly code, statistics, and more.
- Command-line mode for easy integration into automated build processes.
- Exceptionally fast analysis of complex real-world software.
- Freely selectable entry points for the analysis, so you can focus on the worst-case path or other areas of interest, and speed up the analysis even further.
- Seamless integration with other analysis tools from AbsInt — e.g. TimingProfiler for estimating the worst-case execution time.

Your benefits

- StackAnalyzer lets you prevent stack overflow for all possible inputs and task executions under any circumstances — without wasting hardware resources.
- StackAnalyzer requires no code instrumentation, no testing, no measuring, no modification of your system, no modification of your toolchain, and it will not be misled by potential flaws in debug information.
- Using StackAnalyzer is essential in meeting current safety standards such as ISO 26262, DO-178B/C, IEC-61508, and EN-50128, where statically analyzing your stack usage is part of the architectural safety requirements.

Supported processor derivates

- dsPIC33E processor family

Supported compilers

- Microchip MPLAB XC16 C compiler

System requirements

- Windows: 64-bit Windows 10 or 11
- Linux: 64-bit RHEL 9 or compatible
- 4 GB of RAM (16 GB recommended)
- 4 GB of disk space
- The Linux version requires the `libxcb-*` family of libraries to be installed
- Support for macOS is possible on request for a surcharge

Qualification support

Your usage of StackAnalyzer for dsPIC can be qualified according to ISO 26262, DO-178B/C, and other safety standards. We offer Qualification Support Kits that help you simplify and automate your qualification process.

Free trial

You can try StackAnalyzer for free, on your own applications, for a period of 30 days. Your free-trial package includes online training and tech support.

Also available

- ValueAnalyzer for dsPIC
- TimingProfiler for dsPIC