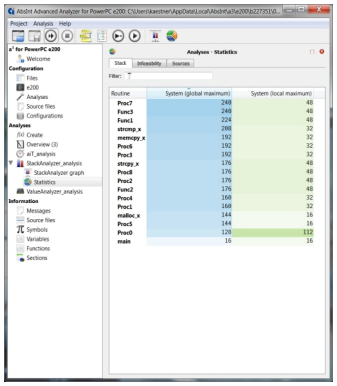
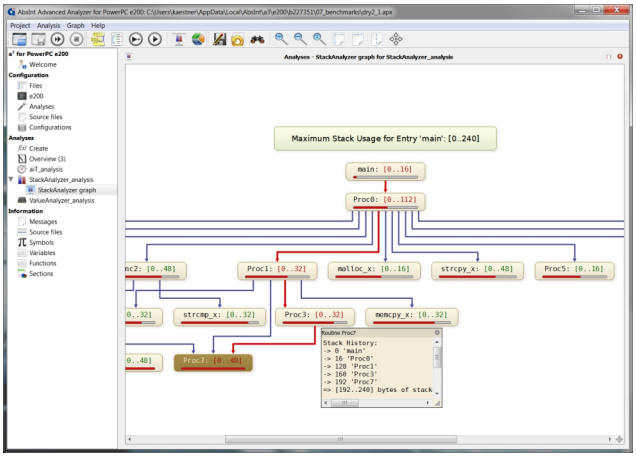
StackAnalyzer – Stack Usage Analysis

Stack overflow is now a thing of the past

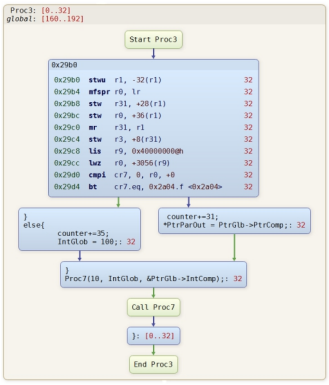
StackAnalyzer automatically determines the worst-case stack usage of the tasks in your application.



Stack usage contributions per function



Call graph with stack usage annotations



Control flow graph with stack usage annotations

Why do you need StackAnalyzer?

Stack memory has to be allocated statically by the programmer. Underestimating stack usage can lead to serious errors due to **stack overflows**. Overestimating stack usage means a waste of memory resources.

- **StackAnalyzer** provides **automatic** tool support to calculate the stack usage of your application. The analysis results are valid for **all inputs** and each task execution.
- **StackAnalyzer** analyzes the **binary executable** and does not rely on debug information, nor on instrumentation.
- **Inline assembly code** and **library function** calls are taken into account.
- **Recursions** and **function pointers** are taken into account.
- Automatic **visualization** of call /control-flow graphs with stack usage.
- Current safety standards (DO-178B/C, ISO-26262, IEC-61508, EN-50128, etc.) require to ensure that no stack overflows can occur. With **StackAnalyzer** you can **prove the absence of stack overflows**. AbsInt's Qualification Support Kits enable a **tool qualification** up to the highest criticality levels.

Supported processors and compilers

- C16x/XC16x/ST10 (Tasking/Keil)
- TriCore (Tasking/gcc)
- PowerPC (Diab/gcc/GHS/CodeWarrior)
- ARM (TI/ARM/gcc/GHS/Tasking/ Keil MDK-ARM)
- NEC/Renesas V850 / RH850 (GHS/Diab)
- Renesas RX (IAR)

- Renesas SuperH (Renesas)
- TI C3x (TI)
- TI C28x (TI)
- TI MSP430(X) (IAR) New
- x86 (gcc/ICC/cygnus)
- M68K (HP/EDS/gcc)
- FR81S (Fujitsu)
- MCS51 (TI CC254x) (IAR) New

- HCS12(X/XE) (Hiware/Cosmic/IAR)
- LEON2/LEON3 (gcc/GNAT)
- ERC32 (gcc/GNAT)
- Freescale ColdFire (HP/EDS/gcc)

For further targets, please contact us.

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