

SEGGER adds Stack Overflow Prevention (STOP) technology to Embedded Studio for ARM

Monheim am Rhein, Germany – June 15th, 2023

The latest release of SEGGER's [Embedded Studio](#) for ARM comes with STOP technology, designed by SEGGER to reliably prevent stack overflows. With STOP enabled, the compiler adds a call to a stack limit-check routine wherever necessary, before adjusting the stack pointer.

The STOP option for the highly optimizing [SEGGER Compiler](#) can be easily switched on, without any change to application code. This way, all stack overflows are prevented. If a stack overflow has been prevented, the system can enter a safe state and recover.

STOP has a surprisingly low impact on size and speed: It adds only about 2 - 5% to code size and execution time, which typically does not have a significant impact on the performance of the system.

“An undetected stack overflow can be catastrophic,” says Rolf Segger, founder of SEGGER. “I recommend the use of STOP for all applications. However, for any safety critical application, I consider it essential. To the best of my knowledge, SEGGER is the only company offering such technology. Whether you’re a software engineer, a student, or a hobbyist, I encourage you to download and try Embedded Studio. It takes less than 15 minutes, is easy and is hassle-free. It is also cost-free for evaluation, education, and non-commercial purposes.”

A stack overflow can cause all kinds of failures in an embedded system, from hard-to-detect, seemingly random miscomputations to severe malfunctions or even crashes. STOP simply works, protecting all stacks in the system.

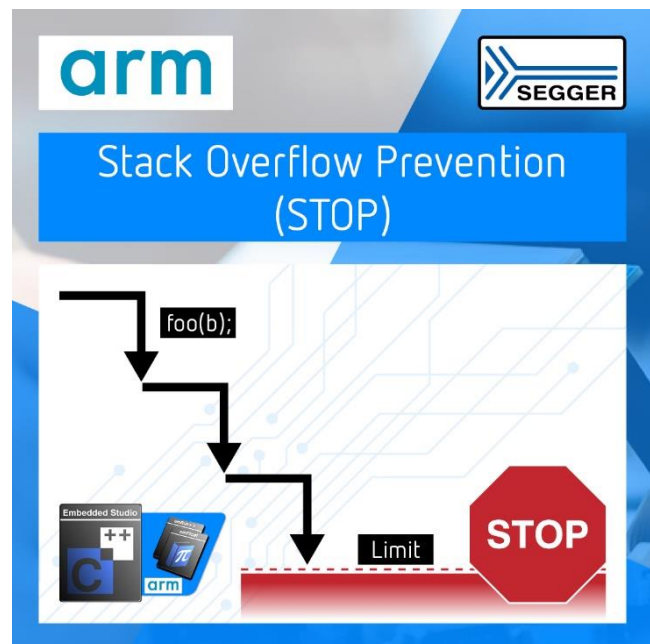
It protects the process stack, as well as the "main" stack used for interrupts.

It can be used with any RTOS, provided the RTOS updates the stack-limit variable on a context switch.

The technology is currently available for Thumb-2 architectures such as Cortex-M4, Cortex-M7, Cortex-A9, and Cortex-A15.

On ARMv7M architectures, STOP is ready to use in Embedded Studio with a single project option switch.

For more information on STOP technology as well as a project demonstrating the technology in the Embedded Studio simulator, check the following links:





Stack Overflow Prevention (STOP) technology on segger.com:

<https://www.segger.com/products/development-tools/embedded-studio/technology/stack-overflow-prevention/>

Stack Overflow Prevention on wiki.segger.com:

https://wiki.segger.com/Stack_Overflow_Prevention

About Embedded Studio

[Embedded Studio](#) is SEGGER's multi-platform IDE (Integrated Development Environment). Characterized by its flexibility of use, it includes all the tools & features a developer needs for professional embedded C and C++ programming & development. It comes with SEGGER's highly optimized [emRun](#) runtime and [emFloat](#) floating-point libraries, as well as [SEGGER's smart Linker](#), all of which have been developed from the ground up specifically for resource-constrained embedded systems. In combination with the Clang-based, highly optimizing C/C++ [SEGGER Compiler](#), extremely small yet efficient programs can be generated, putting every byte to work.

Embedded Studio is available on all platforms (Linux, macOS, and Windows) on Arm, Intel, and Apple Silicon.

With SEGGER's friendly licensing, Embedded Studio can be used for evaluation, and for educational and non-commercial purposes, free of charge, with no restrictions in terms of code size, features, or duration of use.

###

About SEGGER

SEGGER Microcontroller GmbH has three decades of experience in Embedded Systems, producing cutting-edge [RTOS and Software Libraries](#), J-Link and J-Trace [debug and trace probes](#), a line of [Flasher In-System Programmers](#) and [software development tools](#).

SEGGER's all-in-one solution [emPower OS](#) provides an RTOS plus a complete spectrum of software libraries including communication, security, data compression and storage, user interface software and more. Using emPower OS gives developers a head start, benefiting from decades of experience in the industry.

SEGGER's professional embedded development software and tools are simple in design, optimized for embedded systems, and support the entire embedded system development process through affordable, high-quality, flexible, and easy-to-use tools.

The company was founded by Rolf Segger in 1992, is privately held, and is growing steadily. SEGGER also has a U.S. office in the Boston area and branch operations in Silicon Valley, Shanghai, and the UK, plus distributors on most continents, making SEGGER's full product range available worldwide.

For more information on SEGGER, please visit www.segger.com.

Why SEGGER?

In short, SEGGER has a full set of tools for embedded systems, offers support through the entire development process, and has decades of experience as the Embedded Experts.



In addition, SEGGER software is not covered by an open-source or required-attribution license and can be integrated into any commercial or proprietary product, without the obligation to disclose the combined source.

Finally, SEGGER offers stability in an often-volatile industry, making SEGGER a very reliable partner for long-term relationships.

For additional information please visit: www.segger.com

Contact information:

Dirk Akemann

Marketing Manager

Tel: +49-2173-99312-0

E-mail: info@segger.com

Issued on behalf of:

SEGGER

Microcontroller GmbH

Ecolab-Allee 5

40789 Monheim am Rhein

Germany

www.segger.com

SEGGER

Microcontroller Systems LLC

Boston area

101 Suffolk Lane

Gardner, MA 01440

United States of America

Silicon Valley

Milpitas, CA 95035, USA

United States of America

www.segger.com

SEGGER

Microcontroller China Co., Ltd.

Room 218, Block A,

Dahongqiaoguoji

No. 133 Xiulian Road

Minhang District, Shanghai 201199

China

www.segger.cn

All product and company names mentioned herein are the trademarks of their respective owners. All references are made only for explanation and to the owner's benefit.