Percepio Detect™

Continuous Observability® for Embedded Software Testing

Percepio Detect™ brings Continuous Observability to RTOS-based and bare-metal embedded software.

By continuously monitoring runtime behavior, detecting anomalies and reporting crashes, it provides deep insight for software developers, accelerating iteration and improving product resilience.

Why you need Percepio Detect

Software stability issues are costly, especially when discovered late in testing, close to release. Sporadic timing faults, deadlocks, or hard-to-reproduce crashes often force developers into days or even weeks of trying to *recreate* the problem in a debug environment before the real debugging can even begin.

Percepio Detect changes this by delivering recorded diagnostic data from the original incident, allowing you to skip most reproduction work and focus directly on solving the issue.

Detect also includes advanced runtime profiling and can uncover hidden risks, such as near-miss conditions where a timeout fault was close to occurring. These issues often pass unnoticed in testing but can cause cryptic failures when conditions change in the field.

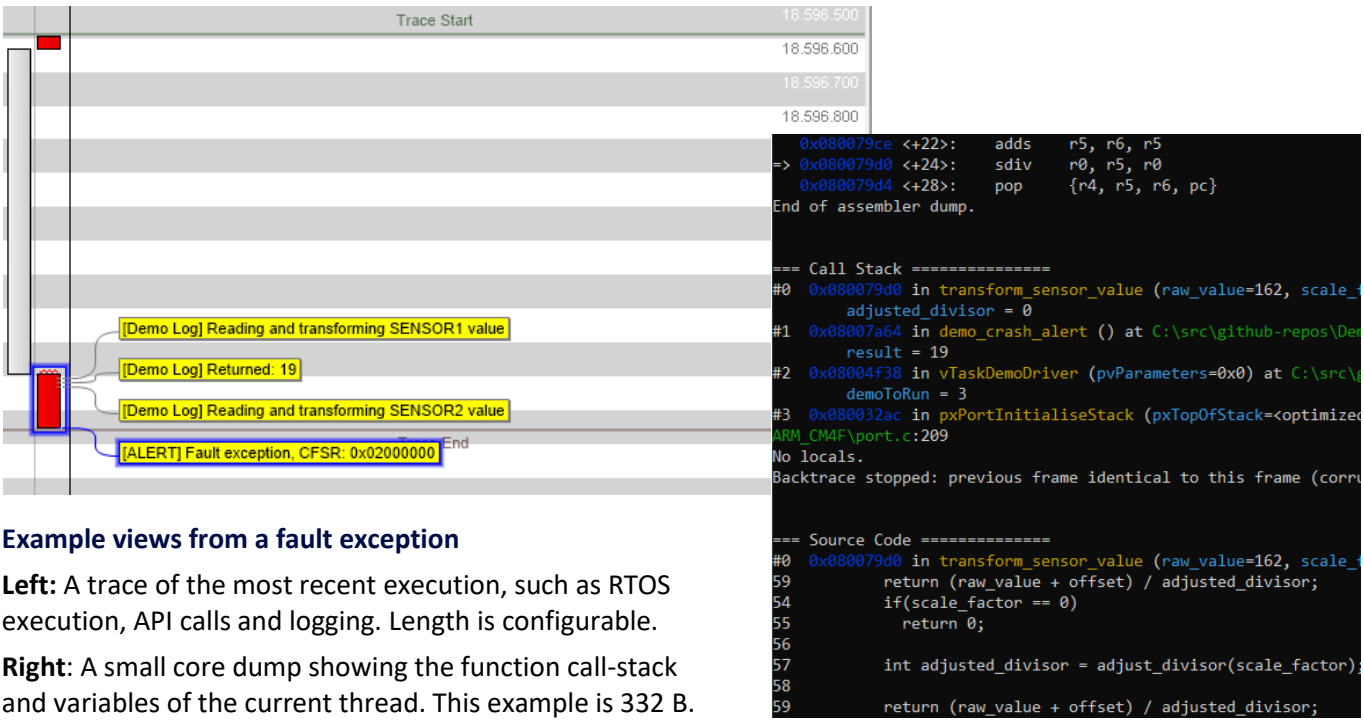
Easy Debugging
Team dashboard with one-click access to integrated debug tools and stored debug data

Avoid Lengthy Issue Reproduction
Automatic capture of trace snapshots and core dumps, include call stacks and variables.

Catch Elusive Issues Early
Find hidden bugs before your customers do.

On-Prem Server
No need to upload sensitive device IP or data to external cloud services. Full data control.

Use-cases	Benefits
✓ CI/CT Stability Testing	Detect hidden RTOS-related bugs and performance regressions early
✓ Effective Crash Debug	Minimize debugging time by avoiding issue reproduction
✓ Timing Requirements	Measure timing and CPU load over unlimited time, even in field tests
✓ Monitor Field Testing	Resolve remaining software issues quickly and confidently

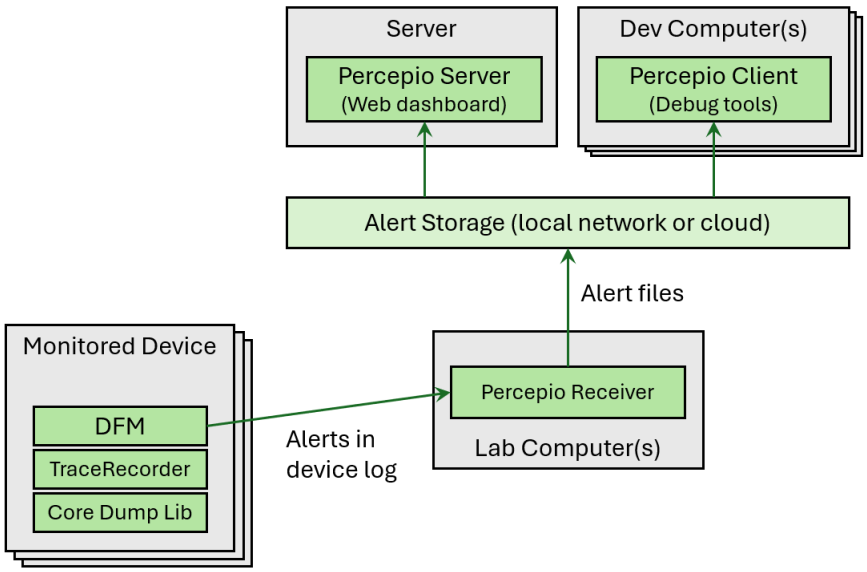


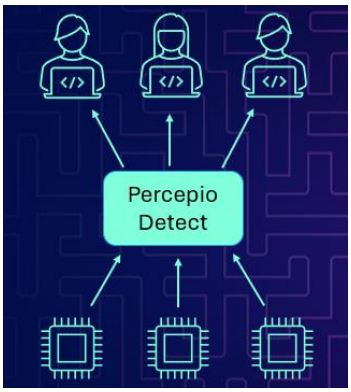
Example views from a fault exception

Left: A trace of the most recent execution, such as RTOS execution, API calls and logging. Length is configurable.

Right: A small core dump showing the function call-stack and variables of the current thread. This example is 332 B.

How Percepio Detect Works





- On Device: The DFM library captures crashes, monitors your software performance metrics and offers an API for custom alerts. It outputs “alert” messages with device metadata (e.g. software version) and diagnostic payloads like TraceRecorder event traces and core dumps.
- Receiver: Reads the device log and stores the DFM alert data in the Alert Storage, monitored by the Server.
- Server: Registers the alerts in the database, with web dashboard access.
- Client: A preconfigured tools package for debugging DFM alerts, including Tracealyzer and a core dump viewer.

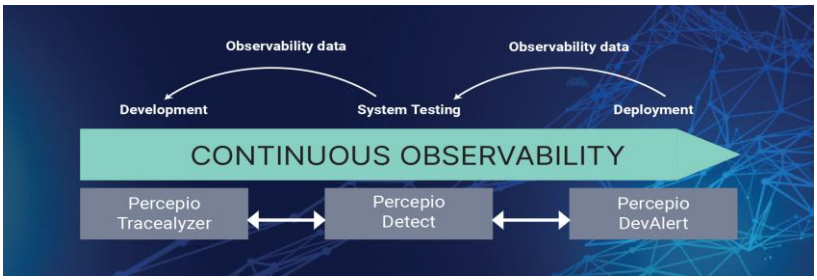
Platform and Integration Support

Percepio Detect is architected for portability across MCUs, RTOSes and toolchains.

- Target Platforms: Arm® Cortex-M microcontrollers (FreeRTOS or bare-metal).
- Pre-Packaged Support: FreeRTOS + GCC and IAR Embedded Workbench for Arm (Cortex-M)
- Integration Points: Flexible SDK architecture enables adaptation to other toolchains and RTOS environments.
- Hosts: Windows and Linux clients for server and dashboard access.
- Server Deployment: On-premises or private cloud

Licensing and Evaluation

Detect is licensed by subscription (per server and usage capacity tiers), with options for flexible terms to match customer procurement needs. A free evaluation package is available at https://percepio.com/download-detect-eval/



Contact Us

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Percepio Detect is a core component of Percepio's Continuous Observability® portfolio, providing deep software insights across all development stages. Developers may start with only Tracealyzer for stand-alone individual use during development, and upgrade to Percepio Detect for test monitoring, optionally integrated in their CI/CT pipeline. Finally, Percepio DevAlert enables the same level of observability in deployed devices at scale.