



Description

KPTrace is a Linux system tracing solution for STLinux running on ST40 and ARM cores. It is a truly innovative solution providing end-users with a real competitive advantage for their developments.

KPTrace allows dynamic tracepoints to be added to both the kernel and user applications, and provides a simple interface to collect and view the trace. Over 300 useful tracepoints are pre-defined, including interrupts, context switches, system calls and much more.

KPTrace can be driven from the command line, or from a very intuitive and powerful graphical interface inside STWorkbench.

KPTrace is available now in the STLinux 2.3 distribution.

Features

- New tracepoints can be added on any symbol without rebuilding or rebooting the system.
- All tracepoints can be enabled and disabled at run-time and, because only enabled tracepoints are actually present in the system, the system intrusion is minimized.
- No additional hardware is required.
- KPTrace can be driven from inside STWorkbench. STWorkbench provides a powerful interface for enabling, disabling and creating tracepoints, generating traces and, most importantly, representing traces in graphical time charts.

Features (continued)

- An easy-to-use command line interface is also provided. This includes a script to display traces in a human-readable format.
- Highly accurate statistics are gathered showing how much time the system spends in each process, thread, softirq or interrupt handler. The statistics also provide detailed information on interrupt latency, ISR duration and more.
- A “flight recorder” mode is available. This uses a single circular trace buffer which allows KPTrace to run for long periods while still generating a trace file of a manageable size.
- All events are timestamped to microsecond precision.
- In the case of a catastrophic crash, the current trace buffer can be extracted over JTAG using an ST Micro Connect.
- Tracing can be paused and restarted at designated “stop” and “start” tracepoints, or programatically using a kernel API.
- A `printf`-style interface to the trace buffer is provided. This allows users to add additional instrumentation in the context of the trace.

Distribution

KPTrace is available in STLinux, which is distributed through the STMicroelectronics STLinux website (www.stlinux.com).

System requirements

The minimum host system requirements for STLinux are as follows:

- 1 GHz processor
- 512-Mbyte RAM
- 1024 x 768 high color screen
- a supported Linux x86 distribution (see [Supported hosts](#))

Note: In order to run STWorkbench, the Sun Java Runtime Environment 5.0 or later is required. No other JVMs are supported, and using earlier versions will prevent STWorkbench working correctly.

Supported hosts

The STLinux development environment is based upon an x86 architecture Linux PC as the development host.

The distribution and tools are supported on:

- Red Hat Enterprise Linux workstation 4
- Red Hat free Fedora distributions

In practice, many current x86 Linux PC distributions are usable.

Revision history

Table 1. Document revision history

Date	Revision	Changes
21-Oct-2008	A	Initial release.

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