DEEP SYSTEM INSIGHTS FOR
EMBEDDED AND MOBILE DEVELOPERS

(intel)

Intel® System Studio

Top Features

- Integrated software tool suite

- Debuggers, analyzers, compilers, and libraries

- Trusted tools and technologies for delivering the next generation of embedded and mobile solutions
  - Communications
  - In-Vehicle Infotainment
  - Retail
  - Industrial
  - Medical
  - Government
  - Others

"Intel® Inspector [part of Intel® System Studio] has a very intuitive user interface that helped me find both memory errors like leaks and data access errors along with threading errors like data races in one package" Ashley Driver, Solutions and Application Architect, Altech Multimedia

For embedded developers, working on Linux. Supports Intel® Atom™, Intel® Core™ and Intel® Xeon® processor-based systems

- Speed development and testing with deep hardware and software insights
- Enhance code stability using in-depth system-wide debuggers and analyzers
- Boost system power efficiency and performance using system-wide analyzers, compilers and libraries

Intel® System Studio is a comprehensive integrated tool suite providing developers with advanced system tools to accelerate the delivery of next generation systems. Intel® System Studio includes the components listed below:

Component	Description
Intel® VTune™ Amplifier	Advanced CPU and System-on-Chip (SoC) analysis for power and performance profiling and tuning.
Intel® JTAG Debugger (optional)	System debugger for Atom SoCs, low overhead event tracing, logging, source level debug of UEFI firmware, bootloader, OS kernel, and drivers. Available with Intel® System Studio for Linux* with JTAG Debugger.
GDB* Debugger	Software debugger for fast application level defect analysis for increased system stability, application level instruction trace, and data race detection.
Intel® Inspector	Dynamic and static analyzer identifies difficult to find memory and threading errors.
Intel® C++ Compiler	Industry-leading C/C++ compiler including the Intel® Cilk™ Plus parallel model for optimized performance. Binary and source compatible with GCC* compilers and cross-compilers.
Intel® Integrated Performance Primitives	Extensive library of high-performance software building blocks for signal, data, and multimedia processing.
Intel® Math Kernel Library	Highly optimized linear algebra, Fast Fourier Transform (FFT) , vector math, and statistics functions.

Intel® System Studio development tools combined with Intel® Atom™, Intel® Core™, and Intel® Xeon® processor platforms provides developers added value and competitive edge in delivering robust embedded and mobile platform solutions across a wide range of markets.

Top Features

Power Optimization and Efficiency

Intel® VTune™ Amplifier – Power Profiler

- Provides in-depth SoC wide visibility of events and analysis of CPU and GPU activities
- Identifies wake-up causes, timers triggered by application, and interrupts mapped to hardware interrupt level
- Displays CPU core frequencies and events that wake-up the processor at the source code level
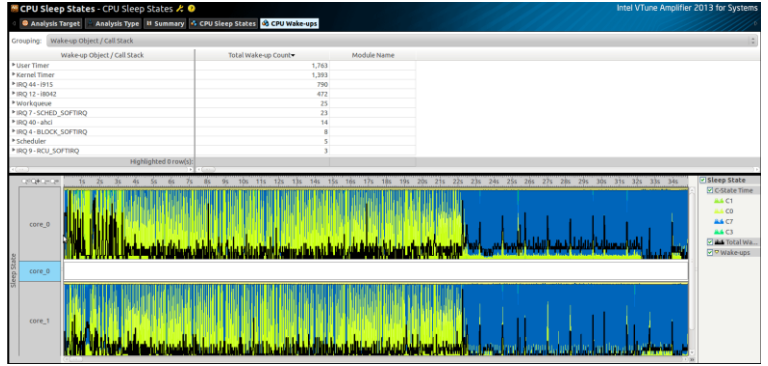
System Performance Optimization

Intel® VTune™ Amplifier - Performance Profiler

- Analyzes system and SoC events
- Displays hardware events with call stacks. Provides lower overhead sampling, and finds hot spots in small functions
- Provides statistical call counts for better data for in-lining and parallelization decisions
- Shows results in source or assembly, no instrumentation required
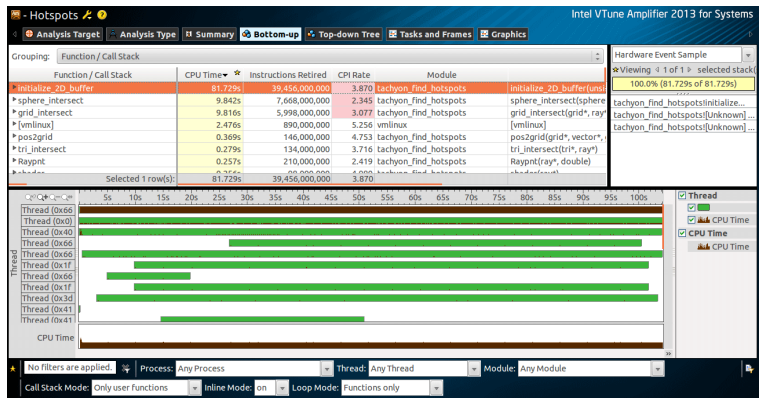
System and Application Debuggers

GDB* Debugger and optional Intel® JTAG Debugger

Advanced system and application level debuggers for fast issue detection

- In-depth CPU, SoC, and chipset debug, with full register description
- Source level debug of OS kernel software, BIOS, UEFI, firmware and drivers
- Ultra-fast software event tracing infrastructure
- Enhanced GDB*-based application debugger
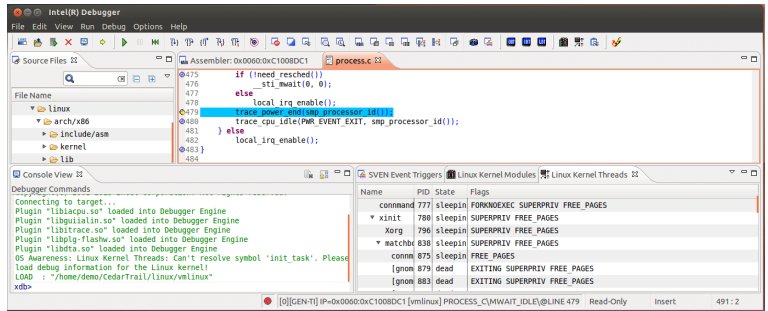
Improve Code Reliability

Intel® Inspector – Dynamic and Static Analysis

- Pinpoints crucial memory and threading coding defects
- Quickly finds memory leaks, invalid access, plus data races and deadlocks
- Executes fast and effective static and heap growth analysis to expose critical defects
- Supports remote data collection, debugger breakpoints, and break on selected errors
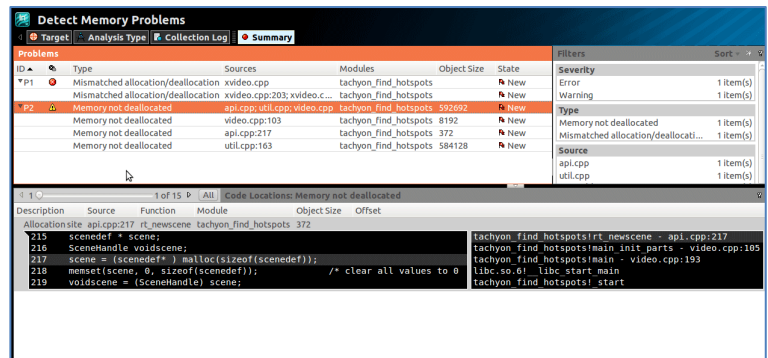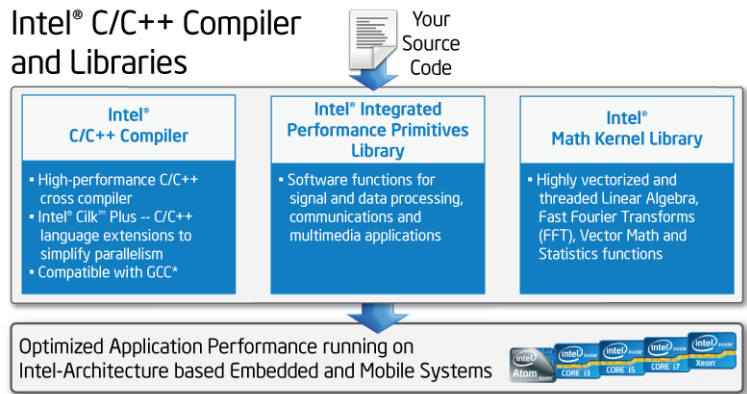
Performance-Optimizing Compiler

Intel® C/C++ Compiler

- Industry leading high-performance Intel® C++ Compiler and libraries delivers the performance and scalability benefits of Intel processors
- Generates faster code through outstanding speed optimizations
- Enables shortest execution times for developing low-power applications
- Includes Intel® Cilk™ Plus to easily utilize performance boosting multicore capabilities
- Supports GNU* cross-build, integration into Eclipse* CDT, and Yocto Project* Application Development Toolkit
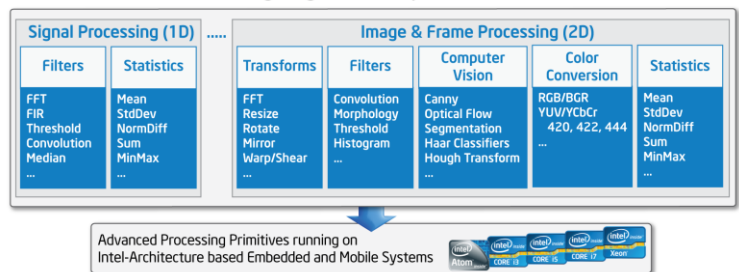
Highly Optimized Algorithmic Building Blocks for Media and Data Applications

Intel® Integrated Performance Primitives

- Provides an extensive library of highly optimized software building blocks for demanding signal, data and multimedia processing applications
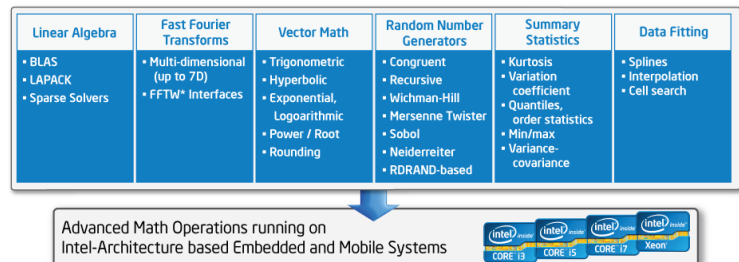
Highly Optimized Math Processing Routines

Intel® Math Kernel Library

- Includes highly vectorized and threaded Linear Algebra, Fast Fourier Transforms (FFT), Vector Math and statistics functions
- Provides highly optimized threaded math routines for Intel® Core™ and Intel® Xeon® processors

Technical Specifications

Specs at a glance	
Host system OS support	Ubuntu* 10.04 LTS, 11.04, 11.10, 12.04 LTS Fedora* 14, 15, 16, 17 and 18 Red Hat Enterprise Linux* 5 and 6 SUSE Linux Enterprise Server* 10 SP4 and 11 SP2 openSUSE 12.1 Please consult the release notes for a detailed overview of supported host platforms *Tested on the aforementioned OSs, however may work on other compatible versions*
Platform support	Intel® Atom™ D2xxx & N2xxx series Processors Intel® Atom™ D5xx, D4xx series Processors Intel® Atom™ E6xx series Processors Intel® Atom™ N4xx, N3xx, N2xx series Processors Intel® Atom™ Z5xx series Processors Intel® Atom™ Processor CExxx Intel® Core™ i3 Processor Intel® Core™ i5 Processor Intel® Core™ i7 Processor Intel® Xeon® Processor
Target system/ device OS support	Wind River Linux 5 Yocto Project* 1.2, 1.3 Fedora* 14 Other target Linux* distributions utilizing a 2.6.x and 3.x.x kernel up to 3.3.x; real-time scheduler support *Tested on the aforementioned OSs, however may work on other compatible versions*
Programming languages	Natively supports: C, C++ and Assembler development
IDE support	Partial Eclipse* support
System requirements	Please refer to www.intel.com/software/products/systemrequirements/ for details on hardware and software requirements.
Support	All product updates and Intel® Premier Support services are included for one year. Intel Premier Support gives you secure, web-based, engineer-to-engineer support. Learn more about this tool http://software.intel.com/en-us/articles/intel-system-studio-articles
Community	Share experiences with other users of Intel® System Studio at the Intel moderated forum: http://software.intel.com/en-us/forums/intel-system-studio

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