

# DEEP SYSTEM INSIGHTS FOR EMBEDDED AND MOBILE DEVELOPERS



## 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

### Accelerate Time to Market, Strengthen System Reliability & Boost Power Efficiency and Performance

- 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 and integrated tool suite that provides developers with advanced system tools and technologies to help accelerate the delivery of the next generation power efficient, high performance, and reliable embedded and mobile devices. Intel® System Studio includes the components listed below:

Component	Description
<b>Intel® VTune™ Amplifier</b>	Advanced CPU and System-on-Chip (SoC) analysis for power and performance profiling and tuning
<b>Intel® JTAG Debugger</b>	System debugger for SoCs, low overhead event tracing, logging, source level debug of UEFI firmware, bootloader, OS kernel, and drivers
<b>GDB* Debugger</b>	Software debugger for fast application level defect analysis for increased system stability, application level instruction trace, and data race detection
<b>Intel® Inspector</b>	Dynamic and static analyzer identifies difficult to find memory and threading errors
<b>Intel® C++ Compiler</b>	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.
<b>Intel® Integrated Performance Primitives</b>	Extensive library of high-performance software building blocks for signal, data, and multimedia processing
<b>Intel® Math Kernel Library</b>	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.

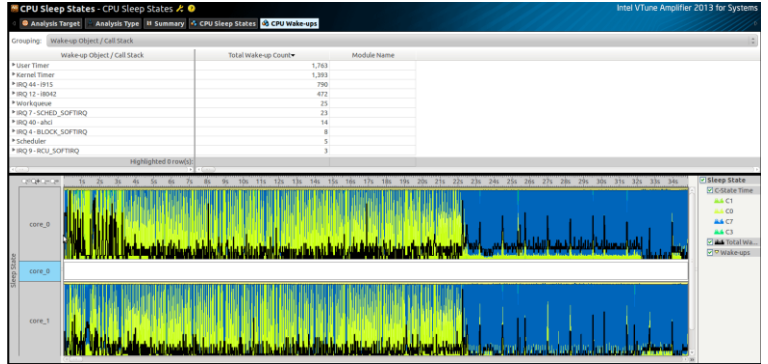
# Top Features

## Power and Performance Analyzers

### Power Optimization and Efficiency

#### Intel® VTune™ Amplifier – Power Profiler

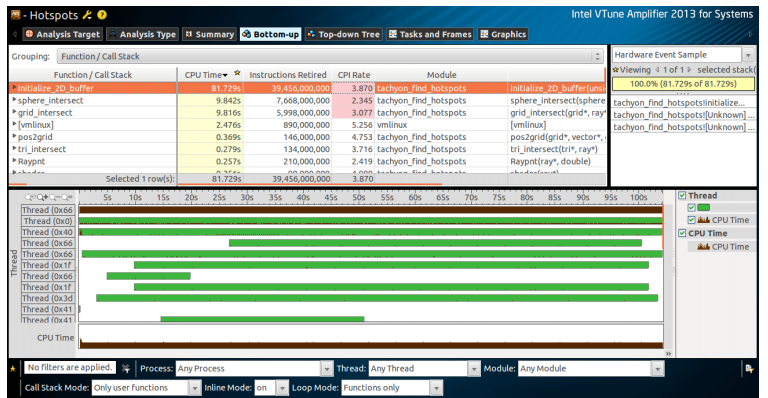
- Provides in-depth SoC wide visibility of events and analysis of CPU and GPU activities
- Identifies wake-up causes, timers triggered by application, and interrupts mapped to hardware interrupt level
- Displays CPU core frequencies and events that wake-up the processor at the source code level



### 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



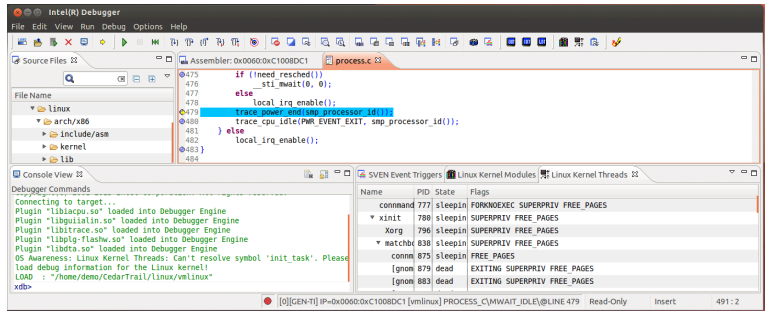
## Debuggers and Analyzers

### System and Application Debuggers

#### Intel® JTAG Debugger and GDB\* Debugger

Advanced system and application level debuggers for fast issue detection

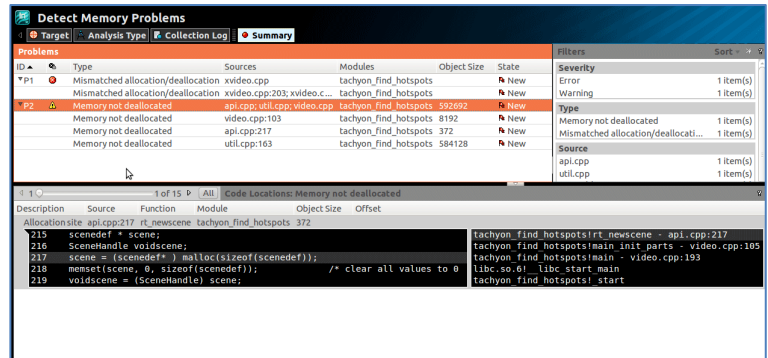
- In-depth CPU, SoC, and chipset debug, with full register description
- Source level debug of OS kernel software, BIOS, UEFI, firmware and drivers
- Ultra-fast software event tracing infrastructure
- Enhanced GDB\*-based application debugger



### 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

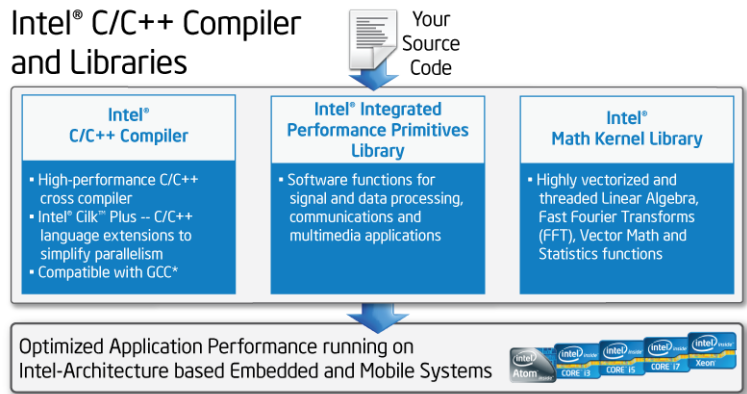


## Performance-Optimizing Compiler

### 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

### Intel® C/C++ Compiler and Libraries

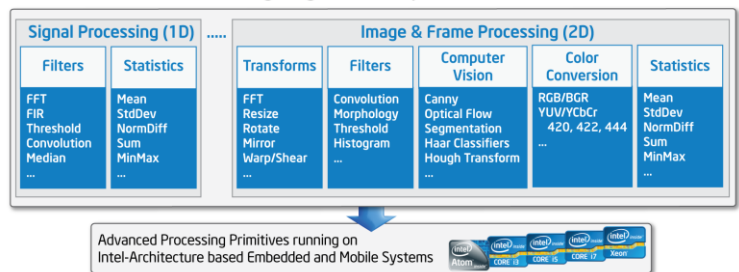


## Highly Optimized Algorithmic Building Blocks for Media and Data Applications

### Intel® Integrated Performance Primitives

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

### Intel® Integrated Performance Primitives (Intel® IPP) Highlighted Capabilities

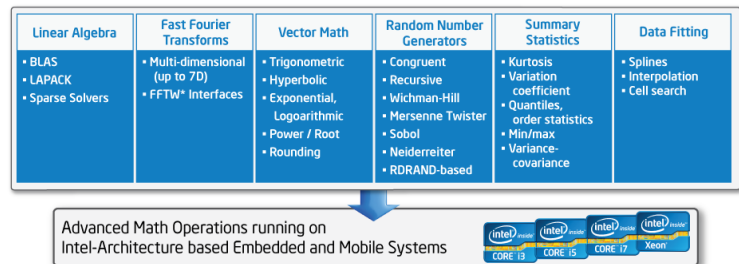


## Highly Optimized Math Processing Routines

### 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

### Intel® Math Kernel Library Highlighted Capabilities



# 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 <i>*Tested on the aforementioned OSs, however may work on other compatible versions</i>
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 <i>*Tested on the aforementioned OSs, however may work on other compatible versions</i>
Programming languages	Natively supports: C, C++ and Assembler development
IDE support	Partial Eclipse* support
System requirements	Please refer to <a href="http://www.intel.com/software/products/systemrequirements/">www.intel.com/software/products/systemrequirements/</a> for details on hardware and software requirements.
Support	All product updates and <a href="#">Intel® Premier Support</a> services are included for one year. Intel Premier Support gives you secure, web-based, engineer-to-engineer support. Learn more about this tool <a href="http://software.intel.com/en-us/articles/intel-system-studio-articles">http://software.intel.com/en-us/articles/intel-system-studio-articles</a>
Community	Share experiences with other users of Intel® System Studio at the Intel moderated forum: <a href="http://software.intel.com/en-us/forum/intel-system-studio">http://software.intel.com/en-us/forum/intel-system-studio</a>

	Learn more about Intel® System Studio 2013 <ul style="list-style-type: none"> <li>Click or enter the link below: <a href="http://intel.ly/system-studio">http://intel.ly/system-studio</a></li> <li>Or scan the QR code on the left</li> </ul>		Download a free 30-day evaluation <ul style="list-style-type: none"> <li>Click or enter the link below: <a href="http://intel.ly/sw-tools-eval">http://intel.ly/sw-tools-eval</a></li> </ul>
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## Optimization Notice

Notice revision #20110804

Intel's compilers may or may not optimize to the same degree for non-Intel microprocessors for optimizations that are not unique to Intel microprocessors. These optimizations include SSE2, SSE3, and SSSE3 instruction sets and other optimizations. Intel does not guarantee the availability, functionality, or effectiveness of any optimization on microprocessors not manufactured by Intel. Microprocessor-dependent optimizations in this product are intended for use with Intel microprocessors. Certain optimizations not specific to Intel microarchitecture are reserved for Intel microprocessors. Please refer to the applicable product User and Reference Guides for more information regarding the specific instruction sets covered by this notice.