



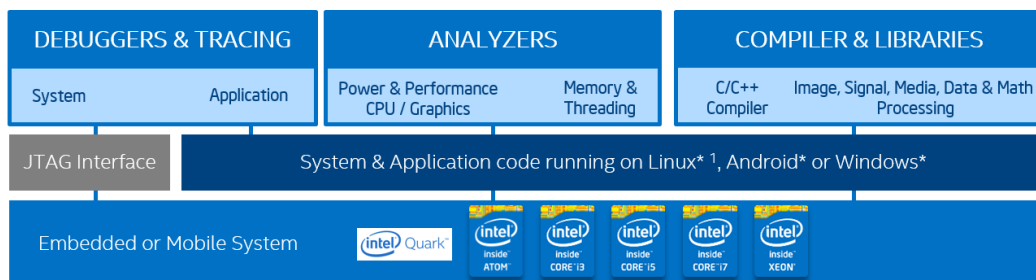
Deep System-wide Insight for Embedded and Mobile Developers

Explosion of connected smart devices is driving an unprecedented need for efficient tools to meet shorter development cycles.

Intel® System Studio provides deep system-wide insight into power, performance, and reliability that

helps accelerate time to market of Intel Architecture-based mobile and embedded systems and embedded applications.

Intel® System Studio is a Complete Tools Solution Covering Embedded Application and System Software Cross-development



¹ Linux*, Embedded Linux, Wind River* Linux*, Yocto Project*, Tizen*

Benefits:

Accelerate Time-to-Market

Speed-up development and testing with deep hardware and software insight

Strengthen System Reliability

Enhance system stability using in-depth system-wide debuggers and analyzers

Boost Power Efficiency and Performance

Boost system power efficiency and performance using system-wide analyzers, compilers and libraries

Composer Edition

- IDE integration for quick start development
- Compiler & Libraries - improve system and embedded application performance and energy efficiency

Professional Edition

- Composer Edition + Performance, power and correctness analyzers for advanced performance and energy efficiency, and more robust systems

Ultimate Edition

- Professional Edition + Deep system-wide insight through JTAG assisted debug and trace capabilities

Intel® System Studio provides

		Target OS Support								
Category	Component	Linux* 1, 5			Android* 5			Windows*		VxWorks*
		Composer Edition	Professional Edition	Ultimate Edition	Composer Edition	Professional Edition	Ultimate Edition	Composer Edition	Professional Edition	Composer Edition
Host Operating Systems		Linux*, Windows*			Linux*, Windows*			Windows*		Linux*, Windows*
Integrated Development Environment		Eclipse*, Wind River* Workbench*			Eclipse*			Visual Studio*		Wind River* Workbench*
Compiler & Libraries	Intel® C++ Compiler	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	Intel® Integrated Performance Primitives	✓	✓	✓	✓	✓	✓	✓	✓	✓ ²
	Intel® Math Kernel Library	✓	✓	✓	✓	✓	✓	✓	✓	
	Intel® Threading Building Blocks	✓	✓	✓	✓	✓	✓	✓	✓	
Application Debugger	Intel-enhanced GDB* Application Debugger	✓	✓	✓	✓	✓	✓			
Analyzers	Intel® VTune™ Amplifier for Systems		✓	✓		✓	✓		✓	
	Intel® Energy Profiler					✓	✓		✓	
	System Analyzer					✓	✓		✓	
	Frame Analyzer ⁴					✓	✓		✓	
	Platform Analyzer ⁴					✓	✓		✓	
System Debugger	Intel® Inspector for Systems		✓	✓					✓	
System Debugger	Intel® System Debugger (JTAG) ³			✓			✓			

¹ Linux*, Embedded Linux, Wind River* Linux*, Yocto Project*, Tizen*

² Delivered with Wind River* VxWorks* platform*

³ Via Intel® ITP-XDP3 probe, OpenOCD*, Macraigor* usb2demon* and EDKII* for UEFI*

⁴ Available on Windows* host only

⁵ Linux* and Android* target support available in a single product

What is new with Intel® System Studio 2015

Windows* Target Support

Plug-in to Microsoft* Visual Studio* the standard IDE for Windows*-based development

- Intel® C++ Compiler and Libraries for improved performance
- Intel® Integrated Performance Primitives, Intel® Math Kernel Library, Intel® Threading Building Blocks performance libraries for improved development efficiency
- Intel® Inspector for Systems for advanced code correctness checking
- Intel® VTune™ Amplifier for Systems for advanced performance profiling
- Intel® Energy Profiler to increase energy efficiency

Enhanced Intel® VTune™ Amplifier for Systems

- Easy remote target collection through graphical interface
- Android* 64-bit Lollipop* and Android* Run-Time (ART) support
- Correlate Android Systrace information with other performance data
- Advanced Android graphics and life cycle events analysis
- Drivers for Java performance analysis now pre-installed into Android Lollipop simplifying usage

Android* Lollipop* And 64-bit Ready

Compiler & Libraries

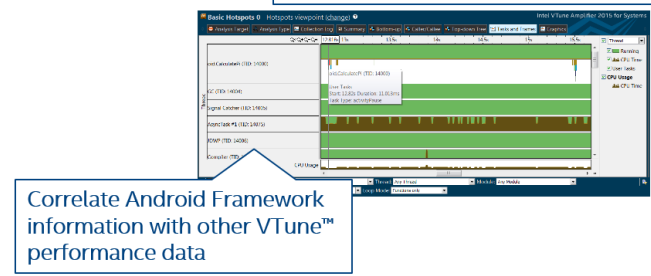
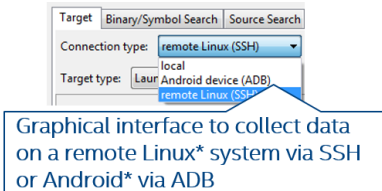
- Intel® C++ Compiler
- Intel® Integrated Performance Primitives
- Intel® Threading Building Blocks

Debuggers

- Intel® System Debugger
- Intel-enhanced GDB* Application Debugger

Analyzers

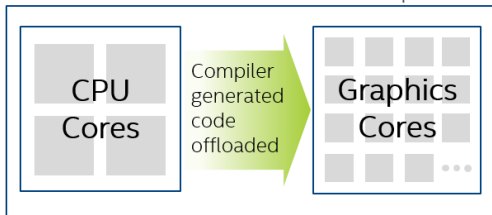
- Intel® VTune™ Amplifier for Systems
- Intel® Energy Profiler
- System Analyzer
- Frame Analyzer
- Platform Analyzer



Offload Compute-intensive Code to Integrated Graphics Cores

- Compiler-generated code executed across CPU and graphics cores with simple #pragma
- Employ Intel® Cilk™ parallel extensions for highly parallel execution across graphics cores

Intel® Core™ Processors and Intel® Xeon® Processors with Intel® HD or Intel® Iris™ Pro Graphics



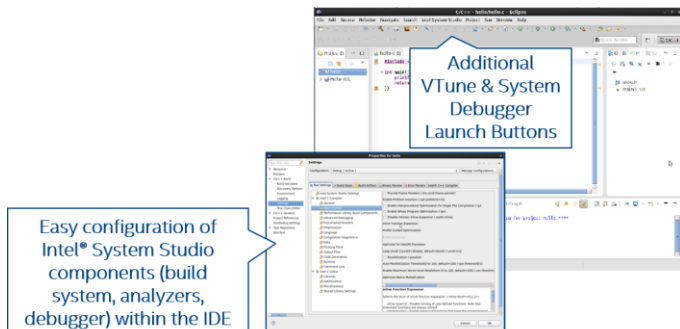
Example: Offloading Using Perfectly Nested _Cilk_for Loops

```
float (* A)[k] = (float (*)[k])matA;
float (* B)[n] = (float (*)[n])matB;
float (* C)[n] = (float (*)[n])matC;

#pragma offload target(gfx) if (do_offload) \
    pin(A: length(m*k)), pin(B: length(k*n)), pin(C: length(m*n))
    _Cilk_for (int r = 0; r < m; r += TILE_m) {
        _Cilk_for (int c = 0; c < n; c += TILE_n) {
            ...
        }
    }
```

Improved IDE Integration

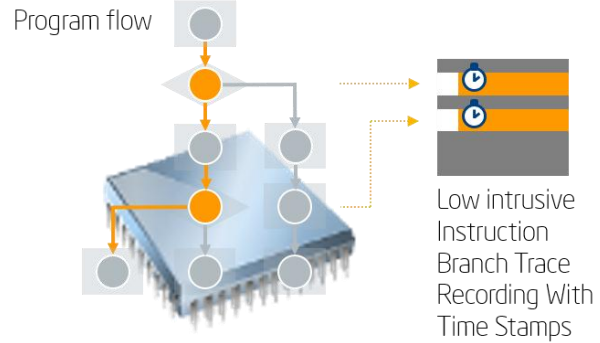
- Intelligent integration into Eclipse* and/or Wind River* Workbench*
- Newly integrated
 - Intel® System Debugger
 - Intel® VTune™ Amplifier for Systems



Intel® System Debugger for Easier Defect Isolation

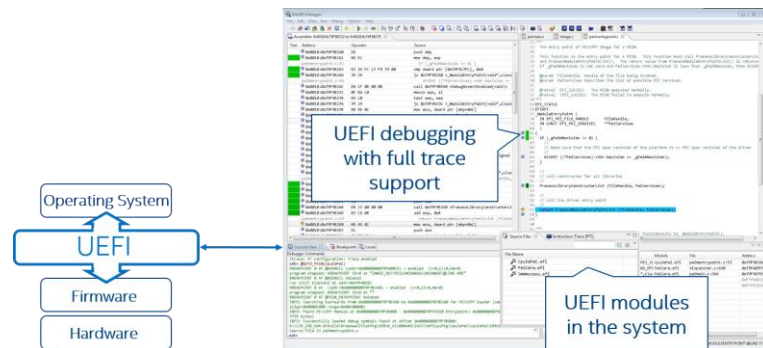
Event trace capability using Intel® Processor Trace introduced for the first time in the new Intel® Core M processor

- Precise analysis through low-overhead recording and time stamps
- Access through JTAG device



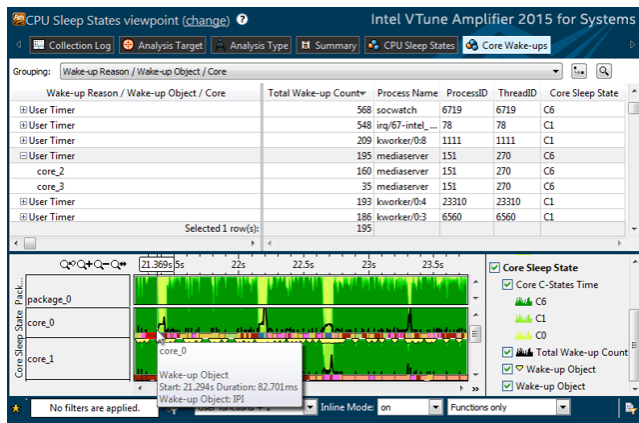
Advanced UEFI Debugging

- Full access and visibility to UEFI (Unified Extensible Framework Interface) through JTAG or USB connections
- Helps quickly isolate non-deterministic bugs



Enhanced Intel® Energy Profiler

- Available now for Windows* targets
- Supports new Intel® Core™ M processor
- Correlates system activity to source code to identify power sapping implementations
- New power data for graphics processors and DRAM self-refresh



System Debugging for Intel® Quark™ Platforms

- Supports connection via low-cost OpenOCD*-based JTAG devices
- Insight to Intel® Quark™ SoCs

Bitfield Editor to view peripheral registers, incl. full documentation

JTAG devices available for <\$100

Summary

Optimize your system and embedded application for increased energy efficiency, more speed, and more reliability.

For more information, to evaluate, or purchase:

<http://intel.ly/system-studio>

For more information regarding performance and optimization choices in Intel® software products, visit <http://software.intel.com/en-us/articles/optimization-notice>.

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