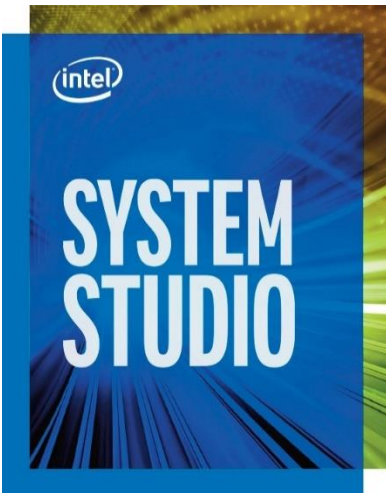


Develop Smart, Innovative Embedded Solutions Faster

Intel® System Studio 2017

A Comprehensive Tool Suite for System and Embedded Development



Supports Linux, Yocto* Project, Wind River Linux*, embedded Linux*, Android*, and Microsoft Windows* target operating systems running on the latest Intel® platforms.*

Speed Time-to-Market for Systems, and Embedded Devices and Applications

Smart, connected devices are increasing in complexity—and are everywhere. Intel® System Studio addresses the challenges facing system and embedded developers, who need tools that:

- **Accelerate software development to bring innovative devices and competitive solutions to market faster**
- Quickly target and help **resolve defects in complex systems**
- **Help speed performance and reduce power consumption**
- **Are comprehensive** and easy to use

Intel® System Studio meets all those needs, helping system and embedded developers deliver great products on Intel® architecture-based platforms. This comprehensive suite includes advanced tools and technologies to help speed delivery of energy-efficient, high-performance, smart, connected devices across wide-ranging system and embedded platforms.

Who Needs Intel System Studio?

- **Device manufacturers** looking for shorter system bring-up and validation cycles
- **System integrators** who need faster software stack integration and optimization
- **Embedded application developers** who want to efficiently deliver new capabilities

Key Benefits

- **Accelerate time to market.** Speed up development with tools that provide deep platform insight.
- **Boost power efficiency and performance.** System-wide analyzers, compilers, and libraries provide a smarter way to develop smart code and boost both power efficiency and performance.
- **Strengthen system reliability.** Quickly and easily enhance system stability using in-depth, system-wide debuggers and analyzers.
- **Worldwide, professional Intel® Premier Support** – which provides direct access to Intel technical experts when needed.

Speed System & Embedded Application Development

Comprehensive, Ready-to-use, Domain-Specific Routines

Shave significant time off your product development schedule with the high-performance, production-quality routines in Intel® Integrated Performance Primitives and Intel® Math Kernel Library.

Reduce Optimization Time with Advanced System-Wide Visual Performance Analysis

Find performance improvement opportunities in minutes instead of hours. Intel® VTune™ Amplifier for Systems aggregates performance data from across your entire system, including CPU, GPU, threading, cache miss, and I/O bandwidth.

Quickly Isolate Complex System Interaction Issues with Correlated Event Tracing

Intel® System Debugger allows you to capture and view logs with time-stamped and correlated trace information between software, firmware and hardware components. Analyze complex interactions between software and hardware, making your product more robust.

Closed Chassis Software Debug & Trace on Production Hardware

JTAG hardware is expensive and cannot always be used in production hardware. This makes finding and resolving software issues in production hardware challenging. Intel® System Debugger, when used with Intel® Silicon View Technology in 6th generation or later Intel® Core™ processors gives you the additional option of debugging and tracing over a low-cost standard USB connection.

Powerful, Easy to Understand Performance Analysis Tools

Intel® VTune™ Amplifier for Systems provides performance insights into CPU and GPU performance, threading performance and scalability, bandwidth, caching and more. Hotspots, call counts, annotated source code and activity graphs help you quickly understand areas to achieve extra performance.

Actionable Wake-Up, Sleep State, Frequency & Temperature Data

Unlike other tools that measure average power usage, Intel® Energy Profiler identifies the cause of the wake-ups. Consolidate wake-ups and save energy by remaining in a low power state for longer periods of time, leading to longer battery life.

Extended Insight into Windows* System for Enhanced Reliability

System debug and trace extensions for Microsoft WinDbg* Kernel Debugger help simplify platform bring-up and Windows driver validation. Debug a completely halted Windows system, including drivers and interrupts, and isolate complex run-time issues faster with Intel® Processor Trace.

Intel® System Studio in Action

Speed Time to Market

5 Minutes vs. 8+ Hours

"IMCORP pioneers complex signal processing algorithms for power transmission cable diagnostics. Intel® VTune™ Amplifier, as part of Intel® System Studio, allowed us to find critical performance hotspots within 5 minutes that otherwise would take us more than 8 hours."

R&D Software Engineer
IMCORP

Strengthen System Reliability

Avoid Weeks of Wasted Effort

"We struggled for a week with a crash situation, the corruption was identified but the source was really hard to find. Then we ran Intel® Inspector and immediately found the array out of bounds that occurred long before the actual crash. We could have saved a week!"

Mikael Le Guerroué, Senior Codec Architecture Engineer
Envivio

Boost Power Efficiency & Performance

3X Better Power Efficiency

"Intel System Studio drastically improved the user experience of our recently launched Android*-based tablet, Tolino Tab* 8" (optimized for eReading)—by a factor of 3x (200ms vs. 500-700ms)—which reduced the CPU workload and the resulting power consumption by at least the same factor."

Dirk Hofmann, Chief Product Owner
Deutsche Telekom

40% Performance Increase

"Intel System Studio helped us to optimize the Adaboost*-based algorithm through recompilation. We could achieve a performance gain up to 40%."

Guo Bin, Development Director
Hangzhou Hikvision Digital Technology Co.

Strengthen System Reliability

'Drastically Reduce' Engineering Efforts

"Intel® System Debugger, as part of Intel® System Studio, enabled us to improve sensitive, hardware-dependent code in our industrial automation system software. It helped us to drastically reduce engineering efforts when analyzing processor internal states and execution of time-critical paths in our software."

Dr. Henning Zabel
Beckhoff Automation



Figure 1: Intel System Studio helps develop smart, connected devices across wide-ranging system and embedded platforms.

Effectively Debug Compute-Intensive Code Offloaded to Graphics Cores

Use simple compiler directives (e.g., #pragma) to mark compute-intensive code to cooperatively execute across processor and graphics cores. An extended debugger supports debugging code running on the graphics cores in addition to the processor cores.

Support for the Latest Platforms

Get support for new Intel® platforms, leading embedded operating systems and latest standards for your product.

Enhanced Developer Productivity

An improved workflow and more task-based tutorials help developers be faster and more productive.

Choose the Edition that Meets Your Needs

- **Composer Edition:** Tools to build performance-optimized code.
- **Professional Edition:** Everything in Composer Edition plus tools to analyze performance, power efficiency, and code correctness.
- **Ultimate Edition:** Everything in the Professional Edition plus system-wide debug and trace for more robustness.

See a list of components per edition on p.4

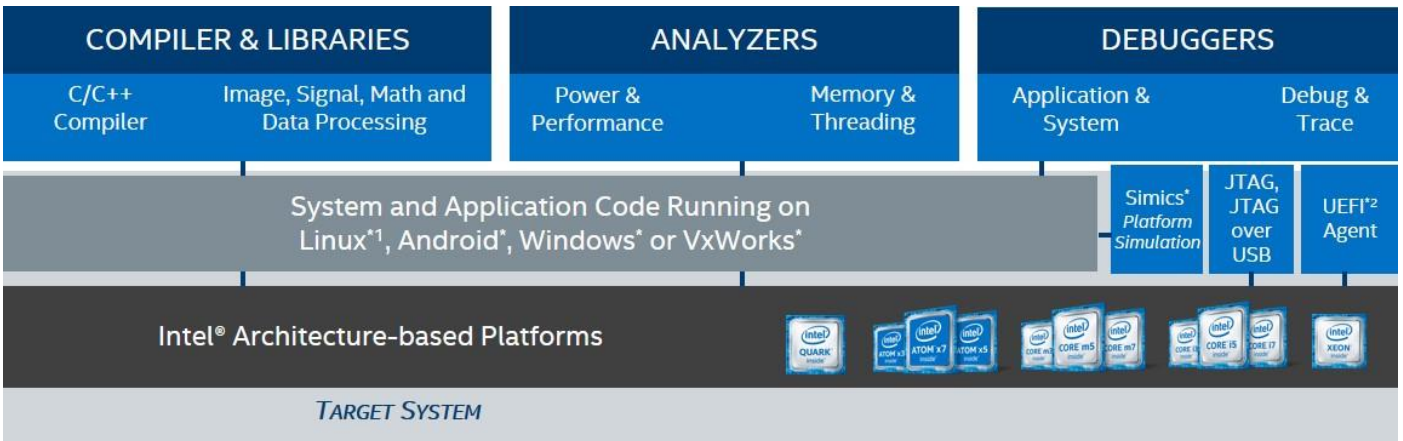


Figure 2: Included compilers and libraries, analyzers, and debuggers.

¹Linux®, Embedded Linux, Wind River Linux®, Yocto® Project
²UEFI: Unified Extensible Firmware Interface

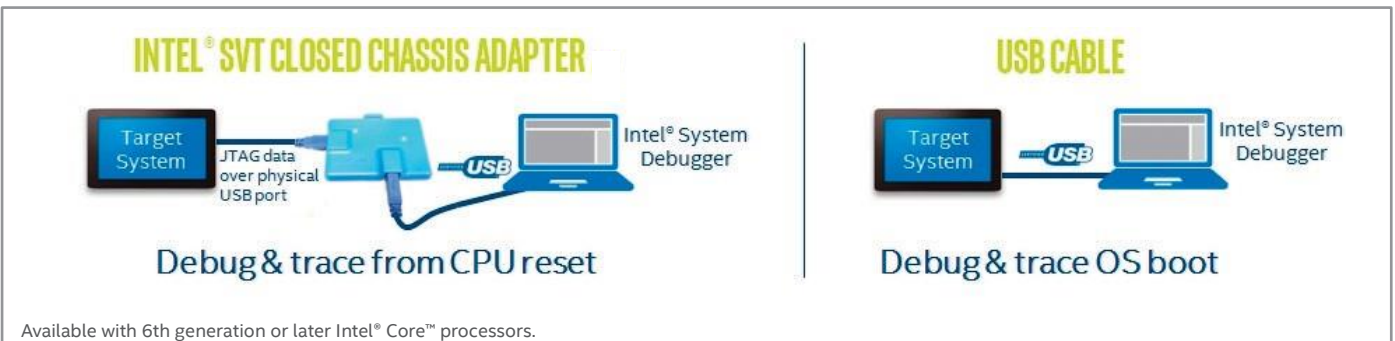


Figure 3: Isolate complex system issues with comprehensive, system-wide event tracing.

	Composer Edition	Professional Edition	Ultimate Edition
BUILD			
Intel® C++ Compiler	✓	✓	✓
Intel® Threading Building Blocks	✓	✓	✓
Intel® Integrated Performance Primitives	✓	✓	✓
Intel® Math Kernel Library	✓	✓	✓
ANALYZE			
Intel® VTune Amplifier for Systems – Performance Profiler		✓	✓
Intel® Energy Profiler		✓	✓
Intel® Graphics Performance Analyzers		✓	✓
Intel® Inspector for Systems – Memory & Thread Debugger		✓	✓
DEBUG			
GDB Application Debugger ³	✓	✓	✓
Intel® System Debugger			✓
GDB over OpenOCD ³			✓
Host Operating Systems	Linux*, Windows*		
Target Operating Systems¹	Linux* ² , Android*, Windows*		
Hardware Processors & Platforms⁴	Processors: Intel® Quark™ X1000 Processor, Intel® Atom™ x3/x5/x7 SoC Processor Series, Intel® Core™ M Processors, Intel® Core™ i3/i5/i7 Processor Series, Intel® Xeon® Processors Development Platforms: Intel® Edison Development Platform, Intel® Joule IoT Module, Intel® Puma™6-Media Gateway, Intel® Galileo Gen 2 Board		

Figure 4: Intel System Studio editions, components, and operating systems.

Additional configurations including floating, academic, and VxWorks* support are available at: software.intel.com/en-us/intel-system-studio/try-buy
 All editions include 1 year of renewable Intel® Premier Support, which provides direct access to Intel system and embedded technical experts.

¹ Target OS: Linux*+Android* (combined), Windows*

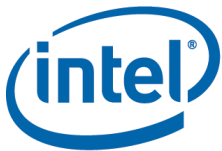
² Linux*, Embedded Linux*, Wind River* Linux*, Yocto* Project

³ Supported on Linux* target OS'

⁴ See release notes for detailed information about supported processors and platforms

Fast Prototyping, Deep System-Wide Insight, Build Competitive Advantage

Intel® System Studio helps developers rapidly move from prototype to production, and provides system and embedded developers the capabilities to be more productive. Supporting the newest Intel platforms and operating systems, it helps build-in better performance with expert compiler and library optimizations. It's easier to isolate complex defects with debug and trace capabilities. And enhanced analyzers let developers improve both power efficiency and performance. The tool suite also works together with other Intel software tools and SDKs - so developers can further innovate unique, competitive features.



Learn More about Intel® System Studio

Download a Free Trial >
intel.ly/system-studio

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.

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