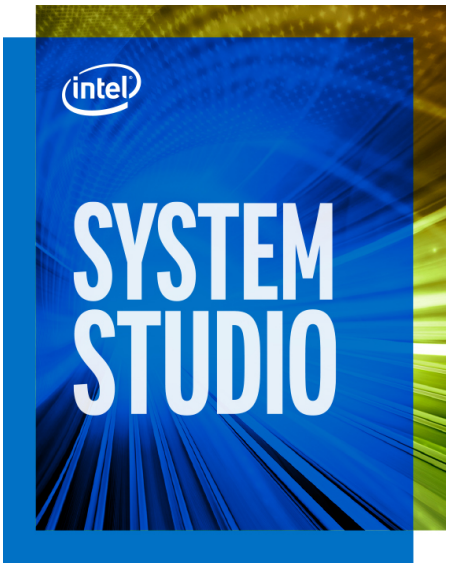
PRODUCT BRIEF

System and IoT Development
Intel® System Studio

Develop Smart, Innovative System and IoT Solutions Faster

A cross-platform tool suite that speeds time-to-market, boosts system and IoT application performance and power efficiency, and helps strengthen system reliability



Smart, connected devices are are everywhere—and growing more complex every day. Intel® System Studio meets the needs of system and IoT developers, helping them 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 IoT platforms.

What it Does

- **Speeds system and IoT application development.** Develop faster with tools that provide deep platform insight.
- **Boosts 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.
- **Strengthens system reliability.** Quickly and easily enhance system stability using in-depth, system-wide debuggers and analyzers.

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
- **IoT application developers** who want to efficiently deliver new capabilities with access to cloud connectors and sensors for solutions like smart driving, perceptive computing, and more

What's New

- **Shorten the development cycle** with new libraries and code samples.
- **Innovate** with new IoT connection tools including cloud connectors and sensor libraries.
- **Optimize code and system performance** by using Intel® AVX-512 instructions in the latest Intel® processors; speed edge analytics processing with a new data analytics library.
- **Reduce system power consumption** by analyzing power behavior; identify performance bottlenecks across network, devices, and remote systems.
- **Ease system validation** for target devices with a new hardware connection mechanism.

- **Ensure reliable data exchange** and flexible storage from edge devices to cloud services with a new cloud connector.
- **Automate tracing easily** with new scripting capabilities.
- **Get easy access** with a new free 90-day renewable commercial license and configuration options to download only the tools you need.

Speed System and IoT Application Development

- **Develop** system and IoT products using a single, easy-to-use, customizable tool suite.
- **Innovate** IoT applications faster with IoT connection tools (cloud connectors and sensor libraries).
- **Reduce** optimization time with system-wide visual performance analysis.
- **Identify** hard-to-find issues faster and more efficiently with debug and trace.

Boost Performance and Power Efficiency

- **Optimize** your software for the latest Intel® platforms.
- **Enhance** performance with powerful, easy to understand performance analysis tools.
- **Access** highly optimized, platform-tuned libraries and compilers.
- **Use** actionable wake-up, sleep state, frequency, and temperature data.

Strengthen System Reliability

- **Use** correlated system event tracing and debugging.
- **Debug and trace** with closed chassis software on production hardware.
- **Identify** hard-to-find dynamic issues with deep platform insight and sophisticated trace capabilities.

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

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, and Intel® Data Analytics Acceleration Library

Quickly Isolate Complex System Interaction Issues with Correlated Event Tracing

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

Closed Chassis Software Debug and Trace on Production Hardware

JTAG hardware is expensive and can't always be used in production hardware. This makes it challenging to find and resolve software issues in production hardware. 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.

Use this comprehensive tool suite to optimize solutions across many industries:

- Industrial/manufacturing
- Retail
- Smart cities, homes, and buildings
- Healthcare
- Storage
- Digital security and surveillance
- Office automation
- And many more

Take Advantage of Priority Support

Paid licenses of Intel® Software Development Tools include priority support for one year from your date of purchase, with options to extend support at a highly discounted rate.

Get Answers from the Experts

- Enjoy direct and private interaction with Intel engineers.
- Submit confidential inquiries and code samples via the Online Service Center.
- Get responsive help with your technical questions and other product needs.
- Have free access to all new product updates and access to older versions.

Additional Resources

- Learn from other experts via community product forums.
- Access a vast library of self-help documents that build off decades of experience with creating high-performance code.

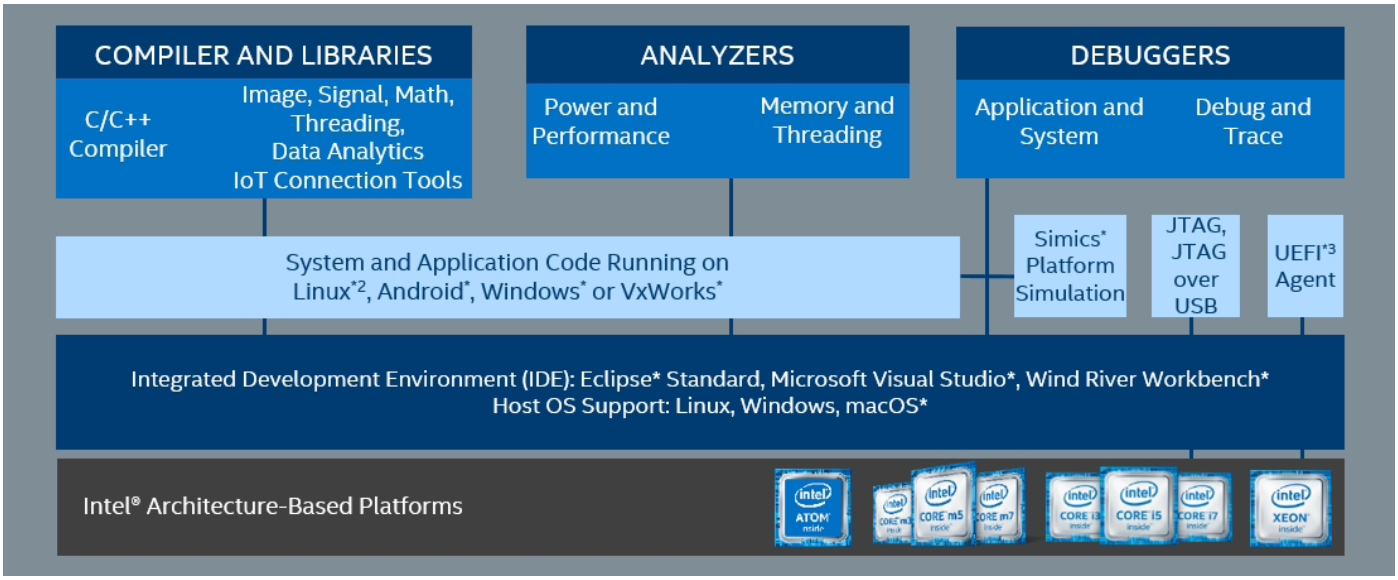


Figure 1. *Get compilers and libraries, analyzers, and debuggers to fit your specific needs*

Powerful, Easy to Understand Performance Analysis Tools

Intel VTune Amplifier 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, and Temperature Data

Unlike other tools that measure average power usage, energy analysis tools identify 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

Intel Debug Extensions for 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.

IoT Connections Tools

Quickly convert ideas into reality with a set of IoT connection tools that abstract the complexities of connecting the sensor to the device and the device to the cloud. Components include standardized, open-sourced abstraction libraries and sensor libraries.

Support for the Latest Platforms

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

Enhanced Developer Productivity

An improved workflow and more task-based tutorials help developers work faster and be more productive. All three editions are for Linux*/Android* or Microsoft Windows embedded targets. Support is also available for Wind River VxWorks* and FreeBSD*. For all editions of Intel System Studio, Intel provides worldwide priority support.

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

Intel System Studio helps developers rapidly move from prototype to production and gives system and IoT 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 with other Intel software tools and SDKs—so developers can further innovate unique, competitive features.

COMPONENT	ULTIMATE EDITION	PROFESSIONAL EDITION	COMPOSER EDITION
BUILD			
Intel® C++ Compiler	•	•	•
Intel® Math Kernel Library	•	•	•
Intel® Data Analytics Acceleration Library	•	•	•
Intel® Integrated Performance Primitives	•	•	•
Intel® Threading Building Blocks	•	•	•
IoT connection tools (UPM/MRAA/cloud connectors)	•	•	•
ANALYZE			
Intel® VTune™ Amplifier	•	•	
Energy Analysis	•	•	
Intel® Graphics Performance Analyzers	•	•	
Intel® Inspector	•	•	
DEBUG			
GNU Project Debugger (GDB) (Linux* Targets Only)	•		
Intel® System Debugger	•		
SUPPORT			
Priority Support	•	•	•
OPERATING SYSTEMS AND PLATFORMS			
Host Operating Systems	Linux*, Windows*, MacOS*		
Target Operating Systems[1]	Linux[2], Android, Windows, FreeBSD*		
Processors	Intel Atom®, Core™, and Xeon® Processors		

[1]Target OS licenses available: Linux plus Android (combined), Windows
[2]Linux, Embedded Linux*, Wind River Linux*, Yocto Project
[3]Supported on Linux target operating systems
[4]See release notes for detailed information about supported processors and platforms.

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