EXTENSIVE MULTICORE-READY LIBRARY

Intel® Integrated Performance Primitives 7.0

Product Brief

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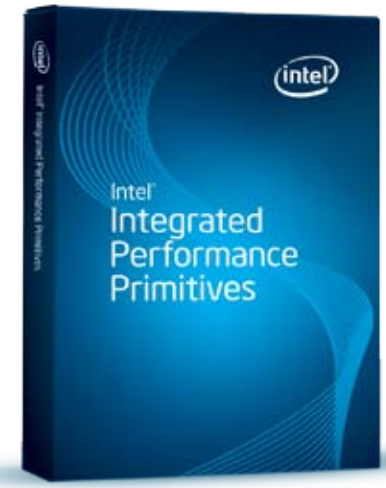
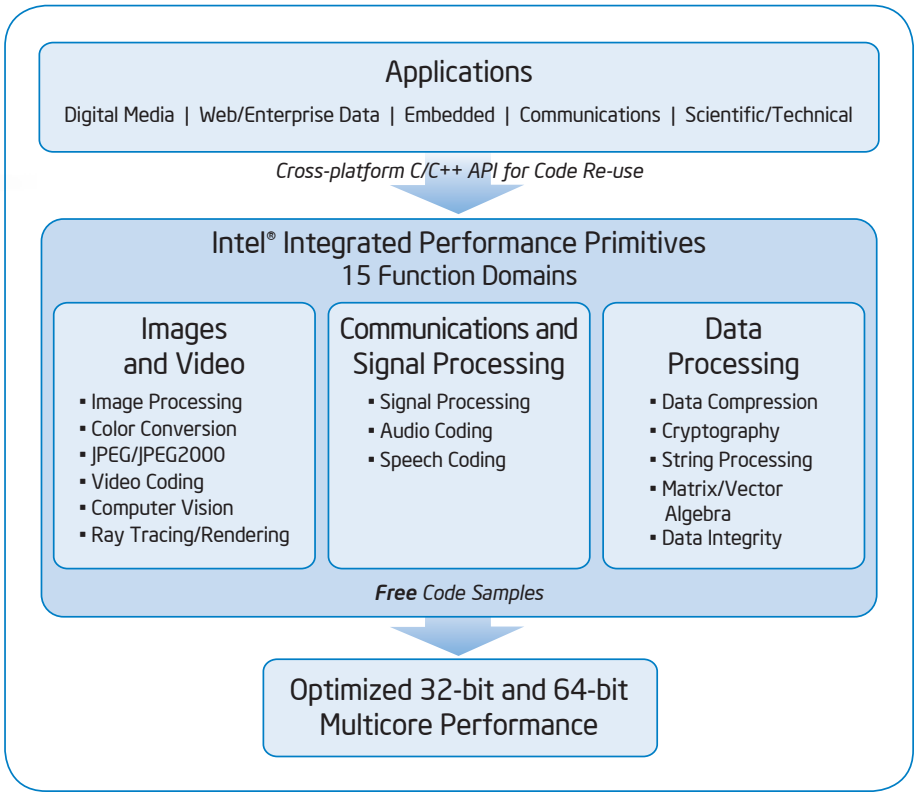


"Intel® IPP provided a 300 percent improvement in the number of users who can simultaneously participate in a webcast."

Leo Volfson
President and Chief Technology Officer
Inetcam, Inc.

Multicore Power for Multimedia and Data Processing

Intel® Integrated Performance Primitives (Intel® IPP) is an extensive library of multicore-ready, highly optimized software functions for multimedia, data processing, and communications applications. For a more complete and cost-effective solution, Intel IPP is available as a component of Intel® Parallel Studio 2011, Intel® Parallel Composer 2011, Intel® Parallel Studio XE 2011, Intel® Parallel Composer XE 2011, and Intel® C++ Composer XE 2011. Intel IPP offers thousands of optimized functions covering frequently used fundamental algorithms.



Features

Features	Benefit
Performance	
Instruction set level optimizations	Intel IPP functions are designed to deliver performance beyond what optimizing compilers alone can deliver. For each Intel® Architecture-compatible processor, Intel IPP automatically detects the instruction set level and dispatches optimized code to take advantage of the Intel Architecture SIMD instructions. For detailed performance data, visit the Intel IPP product Web page at www.intel.com/software/products/ipp.
Support for multicore processors	Intel® IPP functions are fully thread-safe, and many are internally threaded to help you get the most out of today's multicore processors. See below for a complete list of supported CPUs.
Productivity	
Rich set of pre-defined functions	With more than 12,000 functions across 15 domains, Intel® IPP provides a rich set of algorithms to speed your application development.
Source code usage samples	Jumpstart your application development with source code samples incorporating Intel® IPP, including video/audio/speech codecs, image processing, data compression, and other high-level algorithm implementations. Additionally, there are samples showing how to use IPP in Java* and .NET* applications.
Future Proof	
Support for future instruction sets and additional CPU cores	Intel® IPP is optimized for current multicore and future manycore processors. As new instruction sets become supported in Intel CPUs, just relink with the latest version of Intel IPP to achieve the greater application performance provided by the new instruction sets.
Royalty-free redistribution	Redistribute unlimited copies of the runtime libraries with your application.
New Features in Intel® IPP	
Intel® Advanced Vector Extensions performance optimizations	Achieve new performance optimizations for the Intel® Advanced Vector Extensions (Intel AVX) for faster floating-point operations in the signal processing and image processing domains for Sandy Bridge and later processors.
New instruction optimizations for AES and CRC32C	Access Advanced Encryption Standard (AES) and CRC32C new instruction optimizations for major performance increases in data compression and cryptography functions for Intel® Core™ i7 processors.
Windows* Imaging Component API support	Enjoy faster and easier adoption of Intel® IPP image codecs by Windows* developers.
JPEG codec performance improvement	Dramatically improve JPEG codec performance scaling up to 6x over 8 cores.
New JPEG-XR codec sample (previously known as HD Photo)	A new image compression standard: ▪ Get up to 2x the compression level for the same image quality without the need for greater memory or computing resources. ▪ Support lossless and lossy compression as well as incremental decompression of specific image regions. ▪ Support higher dynamic range and color depth than existing image codecs.
Improved data compression algorithms	Benefit from improved and fully productized binary and source drop-in data compression algorithms (bzip2, zlib and gzip).

Intel® Integrated Performance Primitives Technical Specifications	
Processor support	Intel® IPP is validated for use with multiple generations of Intel® and compatible processors including but not limited to: Intel® Atom™ processor, Intel® Core™2 processor, Intel® Core™ processor, Intel® Pentium® D processor, Intel® Pentium® M processor, Intel® Xeon™ processor, Intel ® Pentium® 4 processor, Intel® Celeron® processor.
Operating systems	Use the same API for application development on multiple operating systems: Windows*, Linux*. and MAC OS*
Development tools and environments	Intel® IPP is fully compatible with other development tools from Intel such as compilers, performance and threading analyzers, and other Intel® performance libraries. In addition, Intel IPP is easily used and integrated with popular development tools and environments such as Microsoft Visual Studio* (2005, 2008, 2010), Xcode*, Eclipse*, and the GNU Compiler Collection* (GCC*).
Programming languages	Intel® IPP natively supports C and C++ development; cross-language usage examples provided for C#/.NET and Java*.
System requirements	Please refer to www.intel.com/software/products/systemrequirements/ for details on hardware and software requirements.
Support	Every purchase of an Intel® Software Development Product includes a year of support services, which provides access to Intel® Premier Support and all product updates during that time. Intel Premier Support gives you online access to technical notes, application notes, and documentation. The Intel® IPP customer forum is available here: http://software.intel.com/en-us/forums/intel-integrated-performance-primitives/.

Intel® Software Development Products

Intel IPP is available in the following products:

- Intel® Parallel Studio and Intel® Parallel Studio XE
- Intel® Composer XE and Intel® C++ Composer XE
- Intel® Cluster Studio

Intel Software Development Products help you create the fastest software possible by offering a full suite of tools.

Product Name	Overview
Intel® Parallel Studio 2011	C++ compilers and libraries, error checking, and profiling tools for Microsoft Visual Studio* developers on Windows*
Intel® Parallel Studio XE 2011	C/C++/Fortran compilers, performance and parallel libraries, error checking, profiling, and code quality tools in a single package, available for Windows* and Linux*

Visit our website at www.intel.com/software/products for details about our entire line of products.

More Information and Purchase Options

www.intel.com/software/products

Download a trial version of Intel Integrated Performance Primitives today.
www.intel.com/software/products/eval

Optimization Notice

Intel® Compiler includes compiler options that optimize for instruction sets that are available in both Intel® and non-Intel microprocessors (for example SIMD instruction sets), but do not optimize equally for non-Intel microprocessors. In addition, certain compiler options for Intel® Compiler are reserved for Intel microprocessors. For a detailed description of these compiler options, including the instruction sets they implicate, please refer to "Intel® Compiler User and Reference Guides > Compiler Options." Many library routines that are part of Intel® Compiler are more highly optimized for Intel microprocessors than for other microprocessors. While the compilers and libraries in Intel® Compiler offer optimizations for both Intel and Intel-compatible microprocessors, depending on the options you select, your code and other factors, you likely will get extra performance on Intel microprocessors.

While the paragraph above describes the basic optimization approach for Intel® Compiler, with respect to Intel's compilers and associated libraries as a whole, Intel® Compiler 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 Intel® Streaming SIMD Extensions 2 (Intel® SSE2), Intel® Streaming SIMD Extensions 3 (Intel® SSE3), and Supplemental Streaming SIMD Extensions 3 (Intel® 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.

Intel recommends that you evaluate other compilers to determine which best meet your requirements.

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