

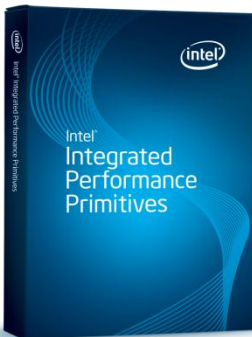


Intel® Integrated Performance Primitives

Product Brief

Intel® Integrated Performance Primitives 7.0

For Windows*, Linux* and Mac OS* X



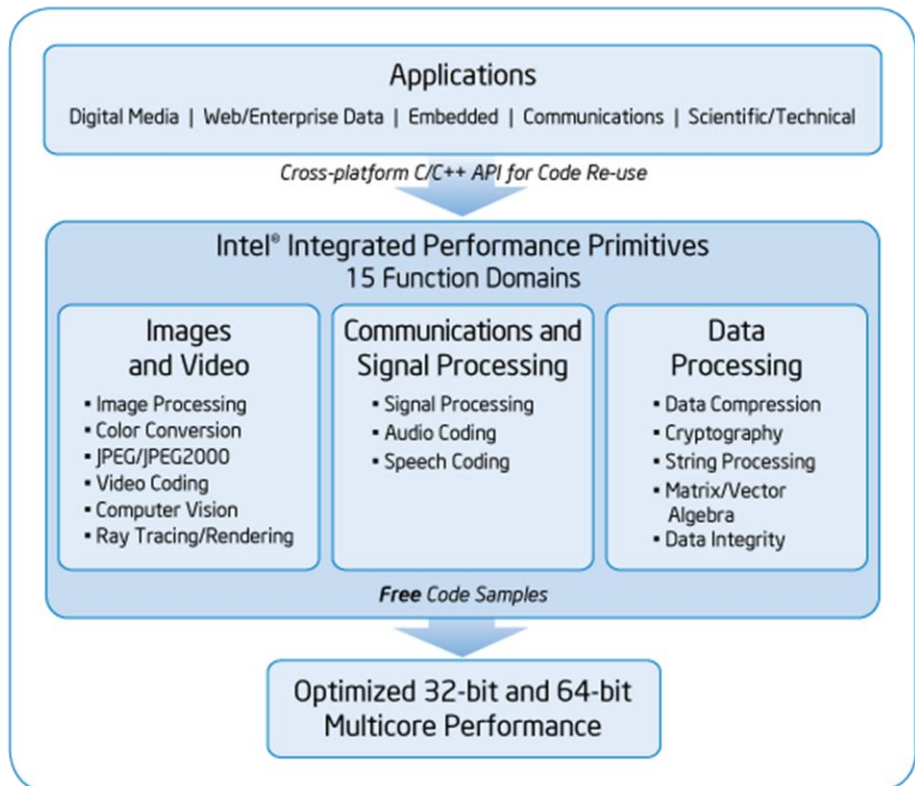
“Intel® IPP provided a 300 percent improvement in the number of users who can simultaneously participate in a webcast.”

Leo Volfson, President and Chief Technology Officer, Inetcam, Inc.

Multicore Power for Multimedia and Data Processing

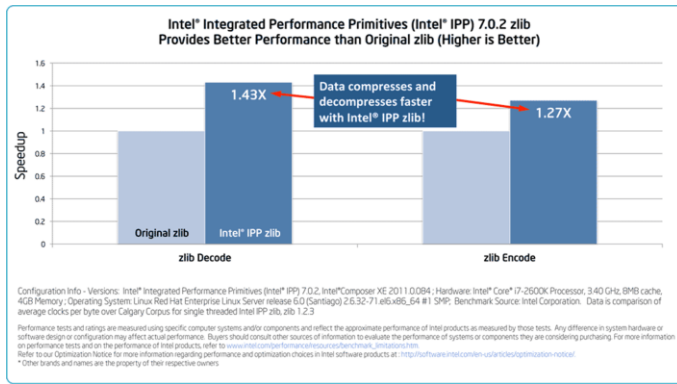
- Library of functions for multimedia, data processing, and communications applications
- Outstanding performance – highly optimized and multicore ready

Intel® Integrated Performance Primitives (Intel® IPP) is an extensive library of multicore-ready, highly optimized software functions for multimedia, data processing, and communications applications. Intel IPP offers thousands of optimized functions covering frequently used fundamental algorithms.

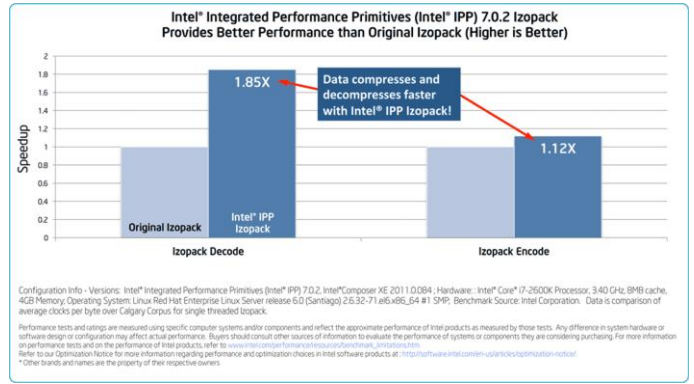


Performance

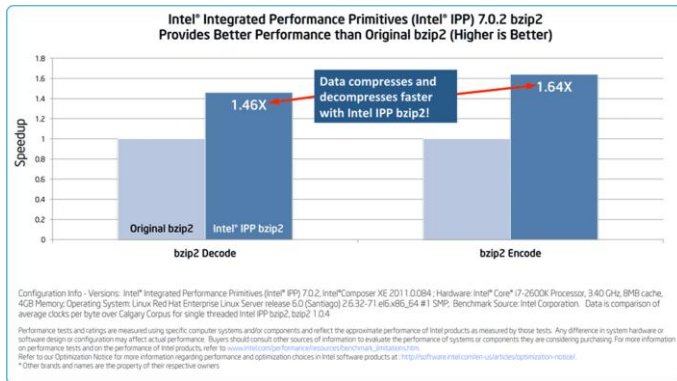
Intel® IPP vs. Original zlib, up to 1.4x faster



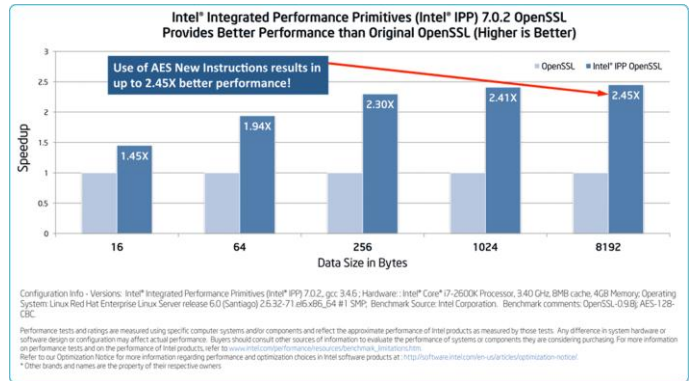
Intel® IPP vs. Original lzopack, up to 1.9x faster



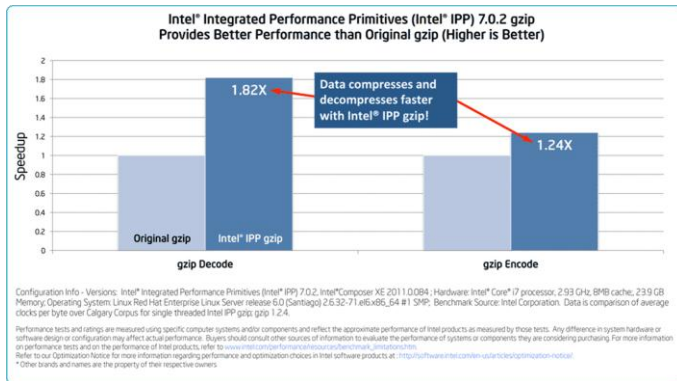
Intel® bzip2 vs. Original zlib, up to 1.6x faster



Intel® IPP vs. Original OpenSSL, up to 2.5x faster

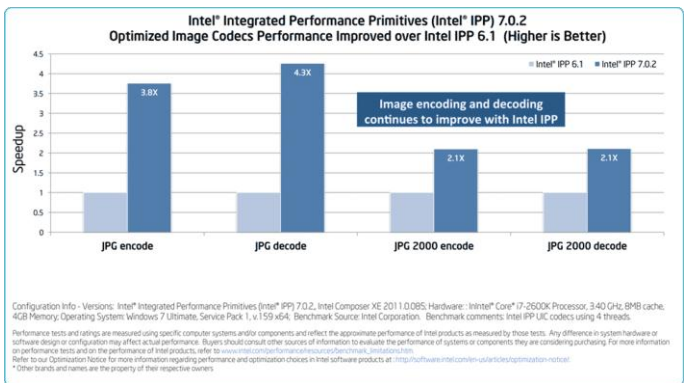


Intel® IPP vs. Original gzip, up to 1.8x faster



Continuous Improvement:

Intel® IPP 7.0 vs. Intel IPP 6.1 up to 4.3x faster



Features

Feature	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 11,000 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).

Purchase Options: Language Specific Suites

Several suites are available combining the tools to build, verify and tune your application. The products covered in this product brief are highlighted in green. Single or multi-user licenses and volume, academic, and student discounts are available.

Suites >>		Intel® Parallel Studio XE	Intel® C++ Studio XE	Intel® Fortran Studio XE	Intel® Composer XE	Intel® C++ Composer XE	Intel® Fortran Composer XE	Intel® Cluster Studio XE	Intel® Cluster Studio
Components	Intel® C / C++ Compiler	●	●		●	●		●	●
	Intel® Fortran Compiler	●		●	●		●	●	●
	Intel® Integrated Performance Primitives ³	●	●		●	●		●	●
	Intel® Math Kernel Library ³	●	●	●	●	●	●	●	●
	Intel® Cilk™ Plus	●	●		●	●		●	●
	Intel® Threading Building Blocks	●	●		●	●		●	●
	Intel® Inspector XE	●	●	●				●	
	Intel® VTune™ Amplifier XE	●	●	●				●	
	Static Security Analysis	●	●	●				●	
	Intel® MPI Library							●	●
	Intel® Trace Analyzer & Collector							●	●
	Rogue Wave IMSL* Library ²						●		
Operating System ¹	W, L	W, L	W, L	W, L	W, L, M	W, L, M	W, L	W, L	

Note: (1)¹ Operating System: W=Windows, L= Linux, M= Mac OS* X. (2)² Available in Intel® Visual Fortran Composer XE for Windows with IMSL* (3)³ Not available individually on Mac OS X, it is included in Intel® C++ & Fortran Composer XE suites for Mac OS X

Technical Specifications	
Processor support	Validated for use with multiple generations of Intel® and compatible processors including but not limited to: 2nd Generation Intel® Core™2 processor, Intel® Core™2 processor, Intel® Core™ processor, Intel® Xeon™ processor, Intel® Atom™ processor, Intel® Pentium® D processor, Intel® Pentium® M processor.
Operating systems	Use the same API for application development on multiple operating systems: Windows*, Linux*, and Mac OS* X
Development tools and environments	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	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	All product updates, Intel® Premier Support services and Intel® Support Forums are included for one year. Intel Premier Support gives you confidential support, technical notes, application notes, and the latest documentation. Join the Intel® Support Forums community to learn, contribute, or just browse! http://software.intel.com/en-us/forums .

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www.intel.com/software/products/eval

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.

