

Backgrounder

Intel® Parallel Studio XE 2011 Service Pack 1

Updated comprehensive development suite enables creation of faster, more reliable applications for multicore and many-core systems.

Intel® Parallel Studio 2011 XE Service Pack 1 (SP1) Overview

Intel Parallel Studio XE 2011 is an integrated tool suite that combines Intel's industry-leading C/C++ and Fortran compilers, performance and parallel libraries, correctness analysers, and performance profilers on both Windows* and Linux*. This tool suite helps high-performance computing and enterprise developers maximize application performance, reliability, and security. The service pack contains numerous quality improvements and refinements to the compilers, libraries, and parallel models that further increase application performance.

“The Intel tools provided an excellent return on investment. Intel Parallel Inspector allowed the code to be validated as ‘data race-free’ on our validation suite, and Intel Parallel Amplifier allows us to focus efforts on the hotspots.” – Andrew Cunningham Technical Staff Member, ESI Group

Highlights of Intel Parallel Studio XE 2011 SP1

Performance: Intel Parallel Studio XE 2011 is key to utilizing processor performance. It provides developers multiple ways to increase application performance by helping them to build faster code with optimizing compilers and libraries, and to eliminate bottlenecks with the performance profiler. Service Pack 1 updates the compilers, libraries and parallel models to further simplify producing faster, more scalable code. Intel Parallel Studio XE SP1 delivers the Intel C, C++ and Fortran 12.1 compilers which provide the performance gains shown in table below.

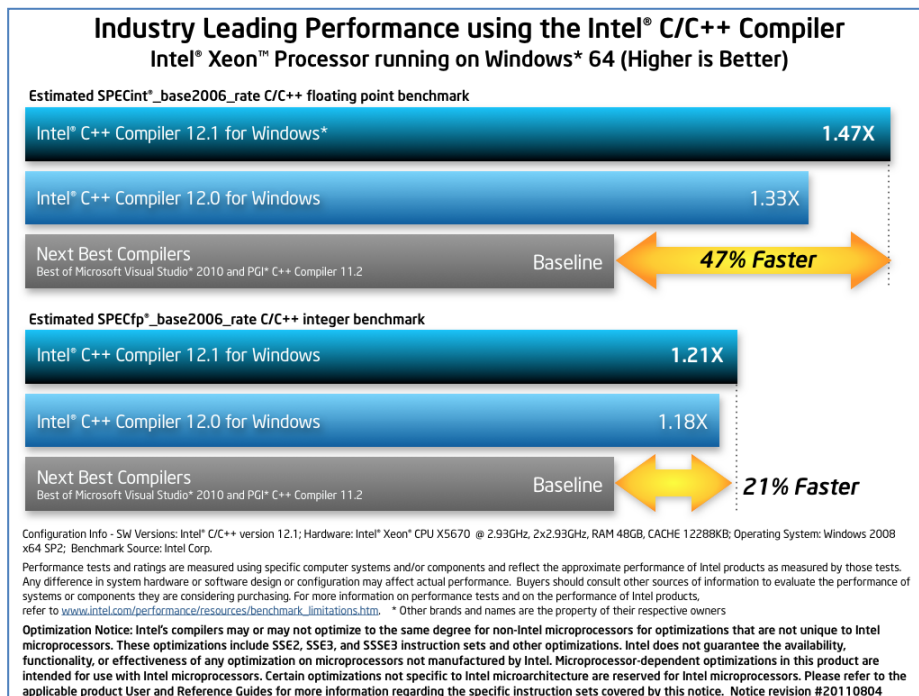
Intel compiler v12.1 performance gains vs. competitive and previous version compilers

	Intel v12.1 Compiler on Windows* vs. nearest competitor	Intel v12.1 Compiler on Linux* vs. nearest competitor	Intel v12.1 Compiler on Windows vs. v12.0	Intel v12.1 Compiler on Linux vs. v12.0
C/C++ Integer ¹	47% faster	12% faster	11% faster	6% faster
C/C++ Floating Point ¹	21% faster	9% faster	3% faster	1% faster
Fortran ²	24% faster	17% faster	22% faster	27% faster

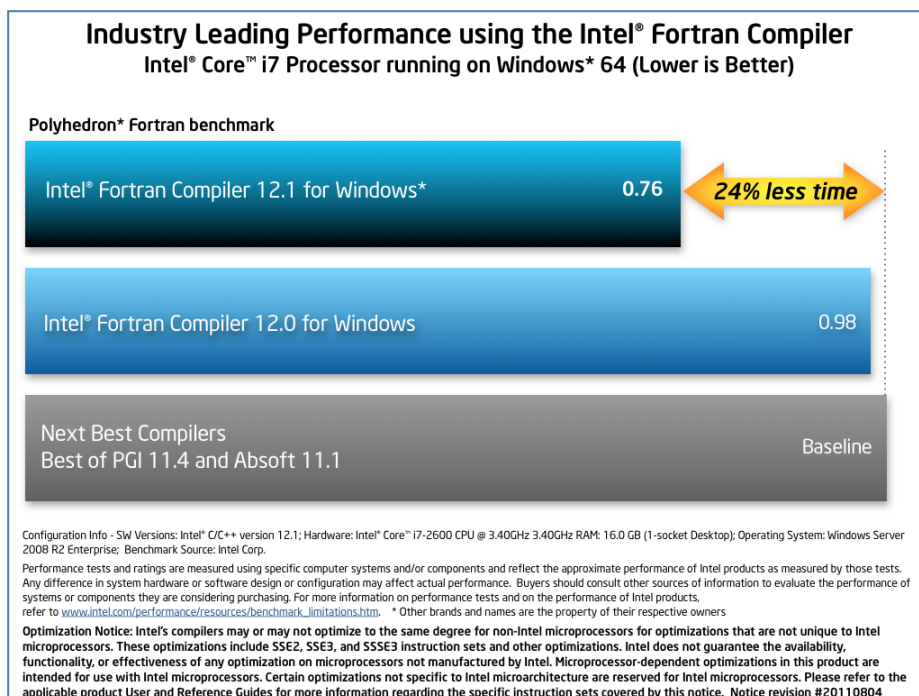
Notes:

¹ C/C++ performance measured using SPECint*_base2006 estimated RATE benchmark running on a 64 bit operating system

² Fortran performance measured using Polyhedron* benchmark running on a 64 bit operating system. In this performance measurement, “faster” refers to percent reduction in time-to-completion.



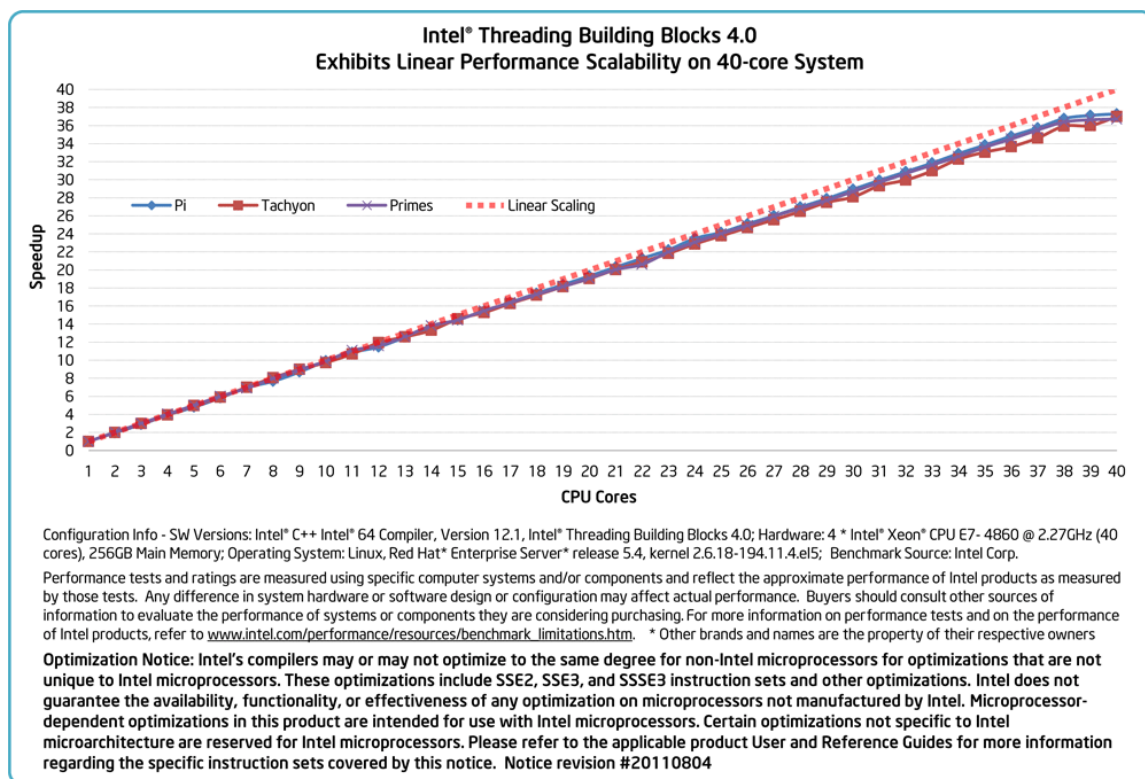
The Intel® C++ Compiler v12.1 produces faster code than the best of the competition and Intel's previous version.



The Intel® Fortran Compiler v12.1 produces applications that provide significant performance gains compared with alternative Fortran compilers.

Scale forward - Processor architectures continuously evolve and developers want the peace of mind that their source code will continue to run optimally on yesterday's single-core, today's multicore and tomorrow's many-core platforms. Intel Parallel Studio XE 2011 provides the tools and programming models that enable developers to develop code that scales on Intel® Xeon® Processors today while easily extending to the Intel® Many Integrated Core (Intel® MIC) architecture. Service Pack 1 further extends that capability, delivering improved versions of Intel® Threading Building Blocks (Intel® TBB) template library (version 4.0) and an updated Intel® Cilk™ Plus compiler extension. The chart below illustrates how Intel TBB scales extremely well on a 40 core system.

“Moving a code to a GPU is a project. Moving a code to Many Integrated Core Architecture... takes a few minutes.” – Dan Stanzione, Deputy Director, TACC



Intel® Threading Building Blocks yields linear scaling on a 40 core system in these three example applications

Tools that developers count on - we have been providing award winning performance tools to the world's most demanding customers for over 25 years. Companies from across many industries use tools from Intel. Developers worldwide use Intel Parallel Studio XE 2011 daily for their critical applications.

“The new interface is a joy to use. Intel® Vtune™ Amplifier XE gives us precise, down-to-the-metal performance data that's invaluable for pinpointing hotspots and evaluating the effect of optimizations” - Daniel Schwarz, Performance Engineer Nik Software customer case study

For more complete information about compiler optimizations, see our optimization notice on page 4

Intel Parallel Studio XE 2011 Service Pack 1 further extends standards support and compatibility on which our customers rely. It supports OpenMP* 3.1, IEEE standard 754-2008 for both binary and decimal floating point computations, and key portions of the latest Fortran* and C++ standards, including:

- C++ Variadic templates
- Lambda support
- Fortran coarray support for distributed-memory system

It also includes the Visual Studio* 2010 Shell for Visual Fortran.

*“I use the Intel® Fortran compiler in Intel® Fortran Composer XE, and I very much like the new Object Browser. It makes it much easier to navigate in modules that have many routines. The compiler is stable and offers outstanding performance.” –
Warner Weiss, Manager, Sugars International LLC*

Availability	September 8, 2011	
Pricing**	Intel® Parallel Studio XE 2011 SP1 for Windows*	\$1,899
	Intel® Parallel Studio XE 2011 SP1 for Linux*	\$2,249
	Intel® C++ Studio XE 2011 SP1 for Windows*	\$1,499
	Intel® C++ Studio XE 2011 SP1 for Linux*	\$1,499
	Intel® Fortran Studio XE 2011 SP1 for Windows*	\$1,599
	Intel® Fortran Studio XE 2011 SP1 for Linux*	\$1,799
	Intel® Visual Fortran Composer XE 2011 with IMSL* for Windows*	\$1,699
More info	www.intel.com/software/products	
Reseller	http://software.intel.com/en-us/articles/intel-software-products-resellers/	

**Additional configuration information available on website

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