Top Features

- Industry-leading application performance that scales as processor core count and vector width increase
- Efficiently scale on tomorrow's hardware while preserving investment in existing code
- Compatible with leading development environments

"If you need performance for your C++ and/or Fortran applications, you need to try Intel software development products."

Dr. Artur Guzik, Senior Engineer**,**
Neubrex. Co., Ltd

" The new VTune Amplifier XE brings even more capability to an already indispensable tool. The sampling based call stack hotspots is excellent and alone is worthy of the upgrade."

Rich Gerber, Engineering Manager,
Adobe Systems, Inc.

Also available in single language:

- Intel® C++ Studio XE
- Intel® Fortran Studio XE

OS Support:
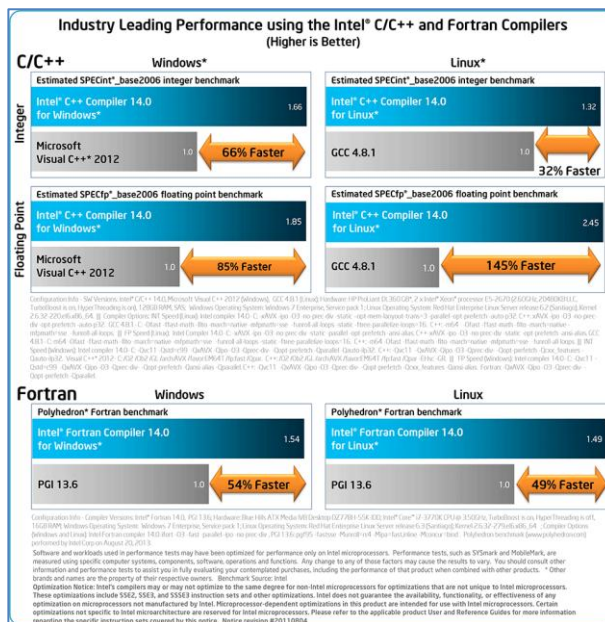
- Windows*
- Linux*

Leading Development Tools for Top Performance

Deliver top application performance while minimizing development, tuning and testing time, and effort. Intel® Parallel Studio XE provides C/C++ and Fortran developers cutting edge performing compilers and libraries, the right parallel programming models, and complementary and compatible analysis tools. It plugs seamlessly into Microsoft Visual Studio* and the GNU tool chain to keep you productive while preserving your development environment investment. Boost performance for your applications as they run on today and tomorrow's IA-compatible processors and coprocessors, including Intel® Xeon® Processors and Intel® Xeon Phi™ coprocessors.

Intel Parallel Studio XE includes the next-generation of software development tools:

- **Intel® C, C++ and Fortran Compilers** – Industry-Leading Compilers
- **Intel® Math Kernel Library (Intel® MKL) and Intel® Integrated Performance Primitives (Intel® IPP)** – Performance Libraries
- **Intel® Threading Building Blocks (Intel® TBB) and Intel® Cilk™ Plus** – Parallel Programming Models
- **Intel® Advisor XE** – Threading Prototyping Tool
- **Intel® VTune™ Amplifier XE** – Advanced Threading and Performance Profiler
- **Intel® Inspector XE** – Memory and Threading Debugger

Get more performance with less effort. Optimize performance by using the latest versions of broadly used Intel® Software Development Products. Simply rebuild with Intel compilers or relink libraries and performance-oriented applications can benefit from the latest IA-compatible processors. These tools also enable developers, who are willing to invest the time and effort, to create ultimate application performance.
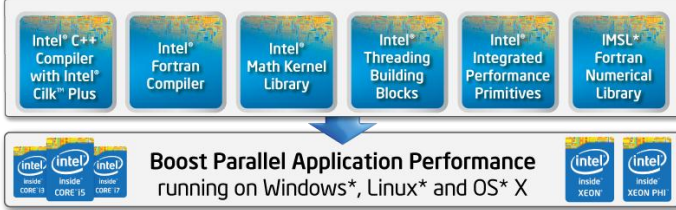

View more benchmarks at http://intel.ly/composer-xe

Top Features

Intel® Composer XE Components
Industry leading C, C++ and Fortran compilers, libraries and programming models

Acclaimed C++ and Fortran Compilers and Libraries

Intel® Composer XE is a performance-oriented developer tool that includes Intel® C++ and Fortran compilers, and threading, math, multimedia and signal processing performance libraries.

- Industry-leading **Intel C++ and Fortran compilers** produce code that runs faster (see benchmark on previous page) than alternatives and is compatible with Microsoft Visual C++* and GCC*.
- **Intel® Cilk™ Plus and Intel® Threading Building Blocks (Intel® TBB)** provide parallelism models that make it easier to take advantage of today and tomorrow's high-performance computing systems.
- Industry-leading **Intel® Math Kernel Library (Intel® MKL)** and **Intel® Integrated Performance Primitives (Intel® IPP)** include a wealth of routines to improve performance and cut development time.
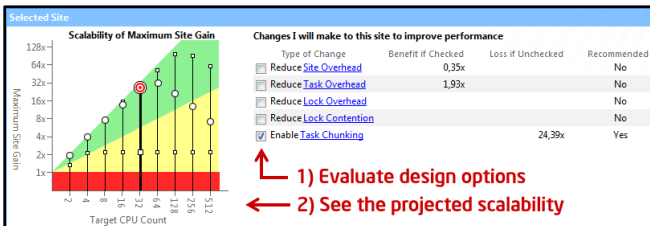- Compatible with leading development environments and compilers on Windows*, Linux* and OS X*.

Additional information: http://intel.ly/composer-xe

---

1) Evaluate design options
2) See the projected scalability

Innovative Threading Prototyping Tool

Intel® Advisor XE is a threading prototyping tool for C, C++, C# and Fortran developers. It finds regions with the greatest performance potential from parallelism and identifies critical synchronization issues.

- Quickly model projected performance scaling of threading designs.
- Project performance scaling on large systems with more cores.
- Find synchronization issues before you implement threading.
- Design with data and avoid wasted effort.

Additional information: http://intel.ly/intel-advisor-xe

Quickly locate code taking a lot of CPU time

See the results on your source

Optimize Serial and Parallel Performance

Intel® VTune™ Amplifier XE is the premier performance and thread profiler to tune your application's performance.

- Profile C, C++, C#, Fortran, Assembly and Java*.
- Collect a rich set of data to tune CPU & GPU performance, multi-core scalability, bandwidth and more.
- Sort, filter and visualize results on the timeline and on your source.
- Use command line input to automate regression tests and make remote collection easy.

Additional information: http://intel.ly/vtune-amplifier-xe

Intel® Inspector XE's dynamic and static analysis shows the source locations of threading and memory errors and provides a call stack for navigation
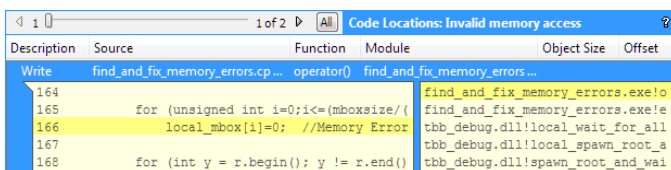
Deliver More Reliable Applications

Intel® Inspector XE is an easy to use dynamic memory and threading error detector for Windows* and Linux*.

- Inspect C, C++, C# and Fortran.
- No special builds required. Use your normal compiler and build.
- Finds errors that regression testing and static analysis miss.
- Debug intermittent and non-deterministic errors.
- Diagnoses heap growth.

Additional information: http://intel.ly/inspector-xe

Bonus: The Intel compiler is not required to use Intel Inspector XE, but you do get additional Intel compiler-based features when you purchase a suite. Static Analysis finds security issues. Pointer Checker traps memory accesses beyond allocated addresses.

Compatibility

Intel® Software Development Tools preserve your investments in existing development environments and code bases while providing capabilities that maximize application performance. Intel® Parallel Studio XE offers excellent compatibility with leading compilers. Intel tools also support development and maintenance of software targeted to run on systems using processors compatible with the Intel Architecture.

Intel® Software Development Products are compatible with leading development environments. On Windows*, they are compatible with Microsoft Visual Studio* 2008, 2010 and 2012. On Linux*, the Intel® Debugger Extension to GDB* helps you debug applications for Intel® Xeon Phi™ coprocessors.

Multiple OS Support, Multiple Language Support

Intel® Parallel Studio XE is available for Windows*, and separately, Linux*. In addition, C/C++, Fortran compilers, and performance and parallelism libraries bring advanced optimizations on the OS X* platform.

Intel® Parallel Studio XE is for developers who need a matched set of C++ and Fortran compilers. For developers interested in a single language, there's Intel® C++ Studio XE and Intel® Fortran Studio XE. Licenses support all IA-32, Intel 64 and Intel® Many Integrated Core (MIC) architectures and feature one year of support and updates.

Try Tools from Intel

The unified suite of supported development tools from a single company eases the use and procurement of software development tools to maximize performance on today and tomorrow's hardware.

Buying Intel tools include the benefit of joining the Intel community and taking advantage of the growing Intel Forum communities for getting/sharing code and ideas. In addition, receive technical expertise through Intel® Premium Support.

Free, 30-day evaluation copies are available for download from our web site, http://intel.ly/sw-tools-eval. The download includes tutorials, code samples, and the ability to jump right in and use your own code.

What's New

Feature	Benefit
Latest Processor Support	Intel consistently offers the first set of tools to take advantage of the latest performance enhancements in the newest Intel product, while preserving compatibility with older Intel and compatible processors.
Expanded OS support for Intel® Xeon Phi™ coprocessor	Intel tools have expanded support to include Windows* hosts for Intel® Xeon Phi™ coprocessors, as well as Linux* hosts.
New OpenMP 4.0 Support	The compiler and analysis tools now support the key features of OpenMP 4.0, including offloading and SIMD extensions.
Conditional Numerical Reproducibility	Expanded conditional numerical reproducibility support in the Intel® Math Kernel Library (Intel® MKL), offering reproducible results on similar platforms that can include today and tomorrow's architectures.
Fortran and C++ Standards Support	Intel® Fortran Compiler extensively supports the F2003 standard and many parts of the 2008 standard, including co-arrays. Intel demonstrates its commitment to the C++11 standard with additional support in this release.
Additional Debugger Support	Developers can use the GNU Project Debugger* (GDB*) on Linux and the Intel® Debugger Extension to GDB to help debug applications for Intel Xeon Phi coprocessors.
Improved Thread Prototyping Tool, Intel® Advisor XE	Intel® Advisor XE is now easier to learn with new training and an improved assistance window. Pause/resume saves time by eliminating analysis of low risk code.
Multiple OS support, Latest IDEs	Intel tools support the latest Linux distributions and Windows operating systems and compatible with other software development tools. See the System Requirements for details on each tool.

Purchase Options: Language Specific Suites

Intel® Parallel Studio XE combines tools to design, build, verify and tune applications that take advantage of multicore and many-core processors. Single language suite editions are also available. If you need MPI cluster tools, consider Intel® Cluster Studio XE. Named-user or multi-user licenses along with volume, academic, and student discounts are available.

	Suites >>	Intel® Cluster Studio XE	Intel® Parallel Studio XE	Intel® C++ Studio XE	Intel® Fortran Studio XE	Intel® Composer XE	Intel® C++ Composer XE	Intel® Fortran Composer XE
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	●	●	●	●			
	Intel® Advisor XE	●	●	●	●			
	Static 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	W, L, O	W, L, O

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

Technical Specifications

Specs at a Glance	
Processor Support	Validated for use with multiple generations of Intel and compatible processors including but not limited to: Intel® Xeon® Processor, Intel® Core™ processor and Intel® Xeon Phi™ coprocessors.
Operating Systems	Windows* and Linux*.
Development Tools and Environments	Compatible with compilers from vendors that follow platform standards (e.g., Microsoft*, GCC, Intel). Can be integrated with GNU* tools and Microsoft Visual Studio* 2008, 2010 and 2012.
Programming Languages	Natively supports C, C++ and Fortran development.
System Requirements	For details on hardware and software requirements, refer to www.intel.com/software/products/systemrequirements/.
Support	All product updates and Intel® Support Forums. Intel® Premier Support services are included for one year and gives you secure, web-based, engineer-to-engineer support.
Community	Join the Intel® Support Forums community to learn, contribute, or just browse! http://software.intel.com/en-us/forums

Learn more about Intel Parallel Studio XE
- Click or enter the link below: http://intel.ly/parallel-studio-xe
- Or scan the QR code on the left

Download a free 30-day evaluation
- Click or enter the link below: http://intel.ly/sw-tools-eval
- Click on 'Product Suites' link

Intel_Parallel_Studio_XE_2013_PB_SP1/Rev082213