



# Intel® Parallel Studio

## FAQ

### **Why is Intel introducing a new line of software development products now?**

Until recently, parallelism was used for technical and high performance computing (HPC), but was not critical for most desktop/client applications. But today, as businesses and consumers invest in multicore hardware, demand is growing for software that takes advantage of these new processor core capabilities.

Parallelism is simply the ability to perform multiple functions simultaneously. Without hardware support for parallelism—available in Intel® multicore processors—there was little or no benefit to writing parallel programs. Now, Intel brings 25 years of parallelism experience in high performance computing to more developers with products that complement and extend Microsoft Visual Studio\* for parallelism.

Intel is committed to:

- Providing software developers with tools to preserve significant investments in source code and development environments
  - Enabling developers to take advantage of the install base of 100% multicore systems
  - Enabling software companies to compete by developing applications that exploit the potential of multicore processors
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## What are the software products in Intel® Parallel Studio?

- **Intel® Parallel Composer** speeds parallel software development with a C/C++ compiler and comprehensive threaded libraries. Developers can choose from a broad array of parallel programming models and use the coding methods most appropriate to a specific application.
  - **Intel® Parallel Inspector** is a proactive memory and threading error checker. This flexible tool adds reliability to all supported parallelism programming models. Unlike traditional debuggers, Parallel Inspector detects hard-to-find threading errors in multithreaded Microsoft Windows\* C/C++ applications and does root-cause analysis for defects such as data races and deadlocks.
  - **Intel® Parallel Amplifier** assists in tuning parallel applications for optimal multicore performance by finding unexpected serialization that limits scaling. Parallel Amplifier makes it simple to quickly find multicore performance bottlenecks.
  - **Intel® Parallel Studio** includes Parallel Composer, Parallel Inspector, and Parallel Amplifier, providing the most comprehensive set of development tools for parallelism.
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## Who will be the primary users of Intel Parallel Studio software products?

Intel Parallel Studio software products are for developers who write some or all of their application software in Microsoft Visual Studio\* C/C++. All Parallel Studio software products are integrated with Visual Studio. This preserves the investment developers have in Visual Studio projects.

Developers who will benefit most from Intel Parallel Studio software products are:

- C/C++ developers who are driven by schedules to include new features and functions in their software releases
  - Developers who want to take advantage of multicore, but are concerned about supporting software on multiple generations of microprocessors and multiple releases of Microsoft Windows\*
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## Do the Intel Parallel Studio software products need to be used together?

Intel Parallel Studio products are designed to work individually as well as together. There is a Parallel Studio product for each phase of the development life cycle. Whether managing all aspects of development or specializing in one, Parallel Studio supports a seamless workflow. Each Intel Parallel Studio product will enhance the ability to create robust and scalable parallel applications.

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## Can I use these products if I don't use Microsoft Visual Studio\*?

Intel Parallel Studio products require Microsoft Visual Studio\*.

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## How much will products in Intel Parallel Studio software products cost?

Pricing will be announced in early 2009.

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### **Who uses the existing Intel® software development products?**

Intel brings decades of experience providing software products to developers working on technical applications, databases, compute intensive applications, and high performance computing (HPC). Intel customers seek to maximize application performance, often through multi-processor parallelism. Intel software development products are used for applications developed in C/C++ and Fortran on Microsoft Windows, Linux\*, and Mac OS X\*. The products plug in to development environments including Microsoft Visual Studio on Windows, XCode\* on Mac OS X, and the gnu tool chain and Eclipse CDT\* on Linux.

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### **What is “forward scaling”?**

When writing any program, it is important to consider how easily the program will migrate to future systems. With the advent of multicore and manycore processors, scaling becomes critical. A program written using the proper techniques and the proper tools is more likely to take advantage of higher core counts. Intel software development products are designed to help with “forward scaling” to manycore processors. Intel research, such as Ct, is heavily focused on developing even more usage models for manycore processors and “forward scaling” for such models.

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### **Will Intel software development products work with Larrabee?**

Programs developed with Intel Parallel Studio, or any other Intel software development product, will forward scale to Larrabee. Future versions of Intel software development products will have specific support for Larrabee.

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### **Are you planning similar products for Linux\* and Mac OS X\*?**

Intel provides products for Linux, Mac OS X and Windows that fully support these operating systems and also offer portability across these operating systems. The new Intel Parallel Studio is focused specifically on extending Microsoft Visual Studio on Windows and offering new innovations and ease-of-use for adding parallelism. Many of these innovations will be available in our other products in the future as well. Developers for Linux and Mac OS\* will find that our current products for Linux and Mac OS X are worth looking at today and already support parallelism better than other tools available for Linux and Mac OS X. Evaluation copies of available Intel Software Products can be downloaded for a free 30-day trial at <http://www.intel.com/software/products/eval>.

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### **Will the new line and the old ones work for processors other than Intel?**

All Intel software development products that produce binaries, executables, or libraries can produce code that will run on x86 compatible processors. Intel analysis tools, such as the Intel® VTune Performance Analyzer, use performance counters specific to Intel® processors and cannot perform their functions on non-Intel processors. Intel Parallel Studio tools will work with all Intel® processors, as well as compatible processors, although there may be some analysis capabilities that are limited by the processor features on a particular system (for some older Intel processors or non-Intel processors).

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## Why use Intel Parallel Composer— isn't the Microsoft Visual Studio compiler sufficient?

Intel Parallel Studio software products integrate and enhance the Microsoft Visual Studio environment with additional capabilities for parallelism at the application level. Support for OpenMP 3.0, lambda functions, auto-vectorization, auto-parallelization, spawn, and threaded libraries are among the additional features you can expect from Intel Parallel Composer. The award winning Intel® Threading Building Blocks is a key component of Intel Parallel Composer that offers a portable, easy-to-use, high performance way to do parallel programming in C/C++.

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## What is the difference between Intel Parallel Composer and the existing Intel Compilers?

The parallelism support in all Intel compilers is compatible and interoperable. Intel Parallel Composer is designed for Microsoft Visual Studio C/C++ developers focused on new parallel implementations of software. Current compilers will continue to be the best choice for high-performance users, such as those in the enterprise (database and server) and HPC. Some features such as support for Linux and Mac OS, and Fortran, as well as advanced levels of optimizations and optimizer controls, will remain unique to the existing compiler products.

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## Where do I sign up for free?

Register on [intel.com/go/parallel](http://intel.com/go/parallel) for announcements regarding the beta program, general product availability, and product information. Once registered, you will be ready to download software and participate in online forums to discuss the software. We hope you'll find these new tools very useful and look forward to your feedback.

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