



# Intel® Visual Fortran Compiler Professional Edition 11.1 for Windows\*

## Product Brief

Intel® Visual Fortran Compiler Professional Edition 11.1 for Windows\*



## Get High Performance with Intel® Visual Fortran Compiler Professional Edition 11.1 for Windows\*

The Intel® Visual Fortran Compiler Professional Edition 11.1 delivers advanced capabilities for development of application parallelism and winning performance for the full range of Intel® processor-based platforms. It includes the compiler's breadth of advanced optimization, multithreading, and processor support, as well as automatic processor dispatch, vectorization, and loop unrolling. It also includes optimized math processing functions in the Intel® Math Kernel Library (Intel® MKL). Try it and see for yourself. Download an eval copy right now: [www.intel.com/software/products/compilers/fwin](http://www.intel.com/software/products/compilers/fwin)

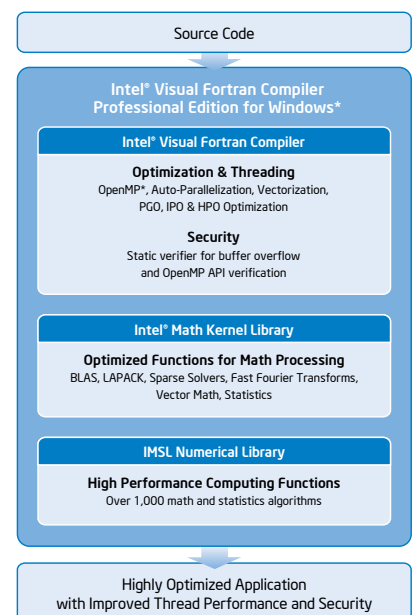
## Professional Editions

**Intel® Visual Fortran Compiler Professional Edition** creates a solid foundation for building robust, high performance parallel code. It combines the Intel Visual Fortran compiler with the following:

### Intel® Math Kernel Library (Intel® MKL)

This library allows you to boost application performance with a set of parallelized, highly optimized, thread-safe, mathematical functions for engineering, scientific and financial applications requiring high performance on Intel® platforms.

**Intel® Debugger** The debugger improves the efficiency of the debugging process on code that has been optimized for Intel® architecture and includes new threaded code debugging features and a new GUI.



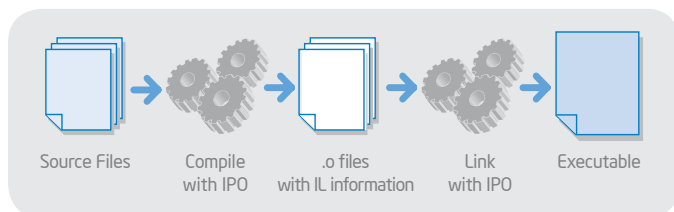
**Intel Visual Fortran Compiler Professional Edition with IMSL\* Fortran Numerical Library** offers the compiler, Intel MKL, and IMSL. The IMSL Fortran Library for Windows provides over 1,000 mathematical and statistical algorithms covering numerical optimization, nonlinear equations, LAPACK, BLAS, and more.

### Intel® Compiler Suite Professional Edition for Windows

This suite combines all the features of the Intel Visual Fortran Compiler Professional Edition, with the Intel C++ Compiler for Windows, Intel® Threading Building Blocks, and Intel Integrated Performance Primitives® for a more complete solution at significant savings.

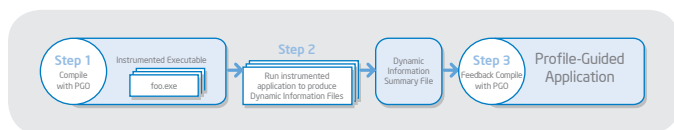
## Advanced Optimization Features

- **High Performance Parallel Optimizer (HPO)** offers an improved ability to analyze, optimize, and parallelize more loop nests. This revolutionary capability combines vectorization, parallelization, and loop transformations into a single pass which is faster, more effective, and more reliable than prior discrete phases.
- **Automatic Vectorizer** analyzes loops and determines when it is safe and effective to execute several iterations of the loop in parallel.
- **Interprocedural Optimization (IPO)** dramatically improves performance of small- or medium-sized functions that are used frequently, especially programs that contain calls within loops.



The interprocedural optimization process

- **Profile-Guided Optimization (PGO)** improves application performance by reducing instruction-cache thrashing, reorganizing code layout, shrinking code size, and reducing branch mispredictions.



The profile-guided optimization process

## More Features

### Microsoft Visual Studio 2008 Shell\*

Provide complete Fortran support by bringing Intel hardware expertise into the latest Microsoft integrated development environment. (Not included in Intel Compiler Suite Professional Edition.)

### Multithreaded Application Support

OpenMP\* and auto-parallelization help convert serial applications into parallel applications, allowing you to take full advantage of multicore technology

### Fortran Standards Support

The compiler offers additional features from Fortran 2003 including object-oriented features, type-bound procedures and operators, and interoperability features that make it easier to develop mixed-language applications.

## Compatibility

The Intel Visual Fortran Compiler is designed to work with Microsoft\* development products and depends on certain components of these. It integrates with Microsoft Visual Studio 2005\* or 2008\*, as well as Visual Studio .NET 2003\*, and provides expanded 32-bit and 64-bit multicore processor support.

The Intel Visual Fortran Compiler for Windows fully supports the Fortran 95 language standard, as well as the previous standards: Fortran 90, Fortran 77, and Fortran IV. It also includes many features from the Fortran 2003 language standard, as well as numerous popular language extensions.

## System Requirements

Please refer to [www.intel.com/software/products/systemrequirements/](http://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.

## Intel® Software Development Products

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

- Intel® Compilers
- Intel® VTune™ Performance Analyzers
- Intel® Performance Libraries
- Intel® Threading Analysis Tools
- Intel® Cluster Tools

Visit our website at [www.intel.com/software/products](http://www.intel.com/software/products) for details about our entire line of products.

**“We tried an early copy of the Intel® Visual Fortran Compiler for Windows\* and our application built right out of the box. We noticed immediately that Intel improved compile-time and we really like the command and source compatibility with Compaq Visual Fortran\*. The compiler also has strong Fortran 95 support. The new Intel Visual Fortran Compiler did all that I expected of it. It is an impressive accomplishment.”<sup>5</sup>**

*Dr. Stuart Campbell  
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CCLRC Rutherford Appleton Laboratory*

## Optimization Notice

Intel® compilers, associated libraries and associated development tools may include or utilize 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 compilers, including some that are not specific to Intel micro-architecture, are reserved for Intel microprocessors. For a detailed description of Intel compiler options, including the instruction sets and specific microprocessors they implicate, please refer to the “Intel® Compiler User and Reference Guides” under “Compiler Options.” Many library routines that are part of Intel® compiler products are more highly optimized for Intel microprocessors than for other microprocessors. While the compilers and libraries in Intel® compiler products 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.

Intel® compilers, associated libraries and associated development tools 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.

While Intel believes our compilers and libraries are excellent choices to assist in obtaining the best performance on Intel® and non-Intel microprocessors, Intel recommends that you evaluate other compilers and libraries to determine which best meet your requirements. We hope to win your business by striving to offer the best performance of any compiler or library; please let us know if you find we do not.

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