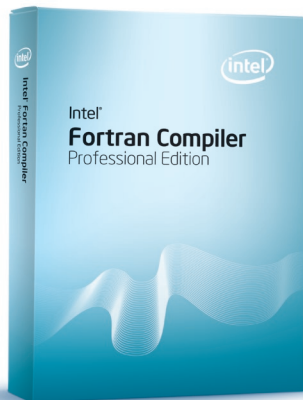# Intel® Fortran Compiler Professional Edition 11.1
for Mac OS* X

(intel®)

Product Brief

Intel® Fortran Compiler Professional Edition 11.1
for Mac OS* X

"We have seen exceptional results during our thorough testing of the beta versions of the Intel Fortran Compilers for Mac OS* X. Intel compilers deliver superior performance for Apple* developers. We will include them in our High Performance Computing Software Development Kits for Mac OS X."§

Rod Mach, Technical Director, High Performance Computing, Absoft Corporation

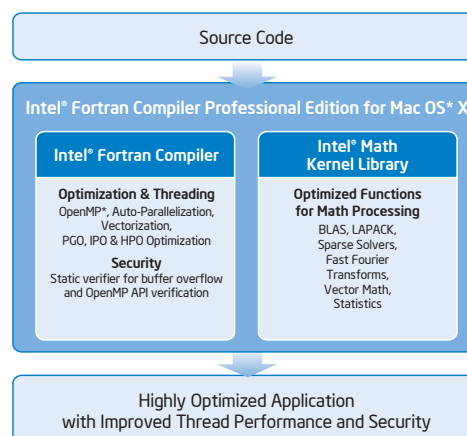## Get High Performance with Intel® Fortran Compiler Professional Edition 11.1 for Mac OS* X

The Intel® Fortran Compiler Professional Edition 11.1 for Mac OS* X 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 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/fmac

Professional Edition Components

The Professional Edition combines a high performance Fortran compiler with the following:

Intel Math Kernel Library (Intel MKL)

Boost application performance with Intel Math Kernel Library (Intel MKL), a set of highly optimized, thread-safe, mathematical functions for engineering, scientific, and financial applications requiring high performance on Intel® platforms. The functional areas of the library include Linear Algebra (BLAS and LAPACK), Linear Algebra (Sparse Solvers), Fast Fourier Transforms (FFT), Vector Math Library (VML), and Random Number Generators.

Source Code

Intel® Fortran Compiler Professional Edition for Mac OS* X

Intel® Fortran Compiler

Optimization & Threading
OpenMP*, Auto-Parallelization, Vectorization, PGO, IPO & HPO Optimization

Security
Static verifier for buffer overflow and OpenMP API verification

Intel® Math Kernel Library

Optimized Functions for Math Processing
BLAS, LAPACK, Sparse Solvers, Fast Fourier Transforms, Vector Math, Statistics

Highly Optimized Application with Improved Thread Performance and Security

Compiler Features

Multithreaded Application Support
OpenMP* and auto-parallelization allow you to take full advantage of multicore technology.
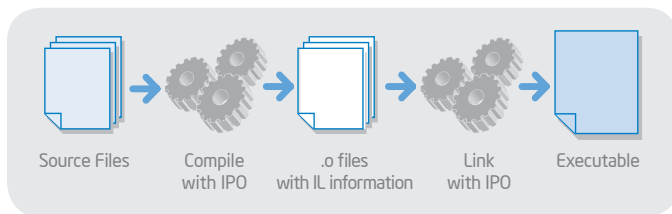
Compatible with Mac XCode* Development Environment
Continue working with this familiar environment while benefiting from the advanced capabilities of the Intel compiler.

Support for Apple Frameworks*
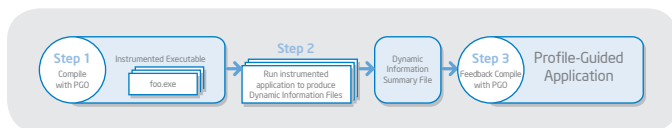Put this powerful Apple programming model to work on Intel® multicore processors.

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 that 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.

Source Files → Compile with IPO → .o files with IL information → Link with IPO → Executable

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.

Step 1 Compile with PGO — Instrumented Executable foo.exe — Step 2 Run instrumented application to produce Dynamic Information Files — Dynamic Information Summary File — Step 3 Feedback Compile with PGO — Profile-Guided Application

The profile-guided optimization process

Compatibility

Xcode* 3.1 Integration
Generates C/Fortran Universal Binaries from the Xcode environment using the Intel Fortran Compilers for Mac OS X and GCC for PowerPC*, retaining compatibility with GCC 4.0. Universal Binaries. Designed to ease the transition between PowerPC and Intel® architecture by combining native code for both architectures in a single compiled package.

Support for Apple Frameworks
Apple Frameworks are a special type of bundle used to distribute shared resources, including library code, resource files, header files, and reference documentation. They offer flexibility that is often preferable to using dynamic shared libraries.

Standards Compliance
The Intel Fortran Compiler for Mac OS X 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/ for details on hardware and software requirements.

Support
Every purchase of an Intel® Software Development Product includes a year of support services, which provide 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 for details about our entire line of products.

Download a trial version today.
www.intel.com/software/products/compilers/fmac

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