



## Product Brief

# Intel® Fortran Compiler 11.0 Professional Edition for Mac OS\* X



"We have seen exceptional results during our thorough testing of the beta versions of the Intel 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."<sup>5</sup>

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

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

The Intel® Fortran Compiler for Mac OS\* X provides a fast and easy way to increase performance for compute-intensive applications.

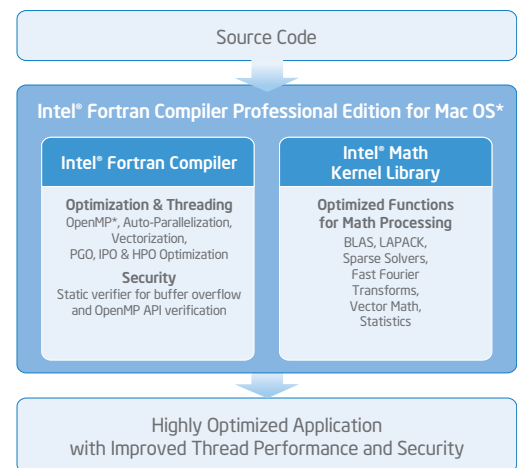
The Professional Edition not only offers a breadth of advanced optimization, multi-threading, and processor support that includes automatic processor dispatch, data prefetching, and substantial Fortran 2003 support, it provides an optimized math processing library as well.

### Professional Edition Components

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

#### Intel® Math Kernel Library (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.



### Compiler Features

#### Multi-Threaded Application Support.

OpenMP\* and auto-parallelization allow you to take full advantage of multi-core technology.

#### Compatible with Mac XCode Development Environment

Continue working with this familiar environment while benefiting from the advanced capabilities of the Intel compiler.

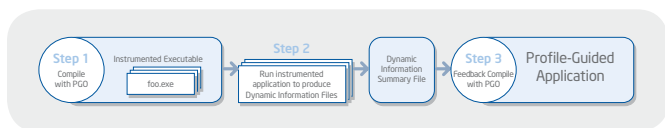
#### Support for Apple\* Frameworks.

Put this powerful Apple programming model to work on Intel® multi-core processors.

## Advanced Optimization Features

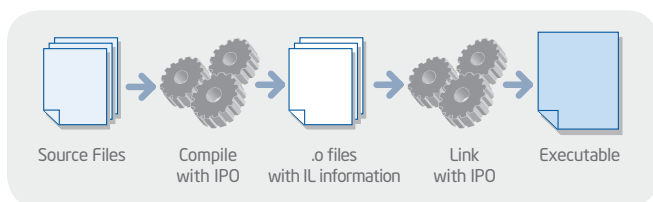
Software compiled using the Intel® Fortran Compiler for Mac OS\* X benefits from advanced optimization features, including:

- **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.



### The profile-guided 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 interprocedural optimization process

- **Interprocedural Optimization (IPO)** dramatically improves performance of small- or medium-sized functions that are used frequently, especially programs that contain calls within loops.

## Performance

**Scientific and research software** benefits from fast compilation and high-performance execution. Numerically intensive software makes excellent use of Intel® processor-based Macs.

**Mobilized software** on mobile multi-core platforms increases performance with low power consumption.

**Numerically intensive design and simulation applications** benefit from dramatic performance optimizations using the Intel compilers to decrease latency and rendering times.

## Compatibility

### Xcode\* 3.1 Integration

Generate 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 are 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 11.0 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/compilers/fmac/sysreq.htm](http://www.intel.com/software/products/compilers/fmac/sysreq.htm) 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.

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