Bundle Up: Intel Offers Comprehensive Professional Editions with New Releases of Compilers and Math Kernel Library

By Shari L. Gould

Regardless of the operating system, creating multi-threaded applications requires more than just the compiler. That's why Intel released Intel C++ and Fortran Compiler Professional Edition 10.0, combining the compiler with key libraries to help simplify multi-threaded application development and provide the tools that support multi-core processors.

Numerous compiler and Math Kernel Library (MKL) improvements are available with this release, including the compiler itself, math processing, and C++ templates for parallelism and multimedia libraries. Intel C++ and Fortran Compiler Professional Editions also offer advanced optimization, multi-threading and processor support, including automatic processor dispatch, vectorization, auto-parallelization, OpenMP, data pre-fetching and loop unrolling.

There are two products to choose from for multi-threaded development. The version for Mac OS X introduced last year combined the compiler with libraries. The 10.0 release extends this model to all supported operating systems.

New Compiler Features

The Intel C++ Compiler Professional Edition 10.0 bundles the compiler with Intel MKL, Intel Integrated Performance Primitives and Intel Threading Building Blocks. Additionally, the Intel Visual Fortran Compiler for Windows comes with the Microsoft Visual Studio development environment.

- *Optimized Performance and Threading*
  Help improve performance for computationally-intensive applications.
- *Enhanced Optimization in C++*
  The compilers can optimize in the presence of C++ exception handling, analyzing and optimizing C++ class hierarchies.
- *Security Checking and Diagnostics*
  Provides GNU Mudflap, Static Verifier for buffer overflow, security and OpenMP API verification.
- *Stand-alone Visual Fortran on Windows*
  Windows users no longer need to purchase Microsoft Visual Studio 2005 separately.
- *64-bit Mac OS X Support*
  Leverage addressing and performance capabilities enabled by the Intel 64 processors in the latest Mac OS X systems.
- *Windows Vista and Visual Studio.Net 2005 Support*
  Get seamless use of property pages, helping to improve the compatibility with your existing VS 2005 projects files.

New Intel MKL Features

The Intel MKL is a set of mathematical functions for engineering, scientific and financial applications. These functions are highly optimized and multi-core ready, meaning they are extensively threaded and thread-safe.

- *Optimization Reports*
  Use advanced optimizations to help the compiler effectively tune your applications.
- *Optimizations for Latest Intel Processors*
  Take advantage of the latest Core2 architecture features designed for improved performance.
- *New Data Compression Functions and Performance*
  Incorporate industry-standard data compression with ready-to-use templates.
- *New bzip2 Functions and gzip-compatible Command Line Utility Code Sample*
  MKL provides data-compression routines targeting enterprise developers.
- *Support for New VC-1 and H.264 High Profile Video codecs*
  MKL can incorporate ready-made templates to render video.
- *LAPACK 3.1 Support*
  MKL is compliant with the latest LAPACK specification.
- *Automatic Grain Size Designed for Better Parallel Algorithms*
  MKL automatically subdivides to optimize.
- *Support for Microsoft Vista and Linux Distributions*
  Deploy applications on the latest operating systems.

Regardless of your platform, you now have the tools to help increase your productivity when developing multi-threaded applications — and you get them at a single, bundled price.

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