



# Intel® Cluster Toolkit 3.2 for Windows\* and Linux\*

In-Depth

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## Intel® Cluster Toolkit 3.2 for Windows\* and Linux\*

Intel® Cluster Toolkit 3.2 provides exceptional value at a significantly discounted price for clusters running either Linux\* or Microsoft Windows\* Compute Cluster Server by bundling Intel® Trace Analyzer and Collector, Intel® Math Kernel Library (Intel® MKL), Intel® MPI Library, and Intel® MPI Benchmarks into a single package. Easy to install and easy to use, this software package helps you develop, analyze and optimize performance of parallel applications for clusters using IA-32, IA-64, and Intel® 64 architectures.

A new Intel® Cluster Toolkit Compiler Edition is also available. In addition to all of the Cluster Tools, the Compiler Edition also includes the Intel® C++ Compiler, Intel® Fortran Compiler, and Intel® Debugger.

### Features

Adding support for Microsoft Windows Compute Cluster Server as well as for Linux clusters, the Intel Cluster Toolkit 3.2 assures industry wide compatibility AND fully tested interoperability of these best in class tools:

- **Intel® MPI Library 3.2**—outstanding performance, flexibility and ease of use
- **Intel® Trace Analyzer and Collector 7.2**—A leading MPI performance analysis product
- **Intel® Math Kernel Library 10.1**—The flagship of high performance math libraries. Extensively threaded, highly optimized, core math functions including BLAS, LAPACK, ScaLAPACK, Sparse Solvers, Fast Fourier Transforms, Vector Math, and more
- **Intel® MPI Benchmarks 3.2**—easy performance comparison of MPI functions and patterns

The latest releases of all the Cluster Tools have increased performance and ease-of use while improving interoperability, scalability, and the number of user options. In one install session, Intel Cluster Toolkit 3.2 saves time by providing a single interface for installation of multiple packages on both the head node and compute nodes. Help is available in the extensive documentation, online help, manuals, and white papers.

With a valid product serial number for the Intel Cluster Toolkit, you can register and/or login to the Intel® Software Development Products Registration Center at <https://registrationcenter.intel.com/RegCenter/Register.aspx> and download the package and updates for one year from the date of purchase. Support extensions can also be purchased. See the left side toolbar for additional support resources including community forums, compatibility, and solutions.

## New in This Release

All the software tools included with Intel Cluster Toolkit have undergone a major revision to give you the best parallel performance analysis tools for cluster software development. The following list contains just a few of the many new features included in this latest version.

### Intel® MPI Library 3.2

- Automatic application-specific performance tuning
- Faster startup and improved collective operation algorithms for even more performance
- Greater scalability over sockets and shared memory
- Enhanced flexibility and control over:
  - Shared memory segment size for ease-of-use
  - OS, compiler, Python, and DAPL check for higher scalability
- Added support for:
  - Intel® Compiler 11.0
  - Microsoft Windows\* HPC 2008 and Vista
  - DAPL 2.0
- Loadable 3rd party process manager (PMI) libraries for tighter integration with leading resource schedulers

### Intel® Trace Analyzer and Collector 7.2

- More reports, more graphics, more analysis, more filtering, more powerful!
- Correctness Checking reports now available in the Intel Trace Analyzer GUI
- Added support for:
  - Intel® Compilers 11.0
  - Microsoft\* Windows Vista and HPC Server 2008

### Intel® Math Kernel Library 10.1

- Performance optimizations for Intel's next-generation microarchitecture family
- Improved integration with Integrated Development Environments
  - Microsoft Visual Studio\*
  - Eclipse\*
  - XCode\*
- Direct Sparse Solver enhancements:
  - Matrix conversion; Forward/backward substitutions

## Intel® Cluster Toolkit 3.2 for Windows\* and Linux\*

- Fourier Transforms:
  - Support for half-complex arrays
- Vector Math Library extensions:
  - Inverse error functions, cumulative normal distribution functions
- Full integration of the Intel® Compatibility OpenMP\* run-time library for greater Windows/Linux\* cross-platform compatibility

## Intel® MPI Benchmarks 3.2

- Extended support for:
  - Microsoft\* Windows HPC Server 2008\*
  - Microsoft\* Visual Studio 2008\*

See the MPI Benchmarks at: <http://www.intel.com/cd/software/products/asm-na/eng/219848.htm>

## Technical Support

With the purchase of Intel® Software Development Products, you will receive one year of technical support and product updates from Intel® Premier Support at <https://premier.intel.com/>, our interactive issue management and communication Web site. This premium support service allows you to submit questions, download product updates, and access technical and application notes, and other documentation. For more information, visit the Intel Registration Center at: <http://www.intel.com/software/products/registrationcenter>

