



# Intel® Cluster Toolkit for Linux\*

## Case Study:

**SimCenter Redux-64-bit Intel® Xeon® Processor-Based Cluster and Optimized Intel® Solution Services Yield Compelling Price/Performance.**

## The Company:

The SimCenter, a research facility at the University of Tennessee.

## The Challenge:

Optimize price/performance in a cluster computing environment.

## The Answer:

Intel® Solution Services helped SimCenter researchers make optimal use of the 64-bit Intel® Xeon® processor during the platform evaluation phase for their new supercomputing cluster.

## The Result:

Faster simulations on a highly reliable and scalable platform helped researchers at the SimCenter provide more accurate results and complete more work in less time.

Learn more about this case study at:  
[www.intel.com/cd/software/products/asm-na/eng/228673.htm](http://www.intel.com/cd/software/products/asm-na/eng/228673.htm)

## The Developer's Toolkit for Cluster Systems

Create applications for Intel® processor-based cluster systems with performance-enhancing tools that include performance libraries, performance analyzers, and benchmark tests—integrated into one easy-to-install software bundle. Intel® Cluster Toolkit 3.0 for Linux\* adds more than 20 new features to the core libraries and tools to efficiently develop, optimize, run, and distribute parallel applications on clusters with Intel processors. The toolkit includes:

- Intel® MPI Library 3.0
- Intel® Math Kernel Library (Intel® MKL) Cluster Edition 9.0
- Intel® Trace Analyzer and Collector 7.0
- Intel® MPI Benchmarks 3

## Features

### ▪ Convenient installation

The master installer supports a distributed install option that provides installation on the head node and compute nodes of a cluster, in one operation.

### ▪ Simple license administration

Intel Cluster Toolkit is a single integrated package that provides a set of tools with a single license.

### ▪ Easy access to help

**Online documentation with index** and hyperlinked documentation for all toolkit libraries and tools.

## Boost Cluster Performance

Use these advanced performance solutions to speed parallel computing development and deliver high performance on cluster systems, whether they are small or large:

- Intel MPI Library 3.0 provides a flexible and high-performance implementation of MPI for easy MPI application development on multiple network architectures, now with full thread safety.
- Intel MKL Cluster Edition 9.0 includes optimized ScalAPACK (Scalable LAPACK), vector math and statistical libraries, direct and iterative sparse solvers, and distributed-memory Fast Fourier Transforms. Now ensures optimized performance of the Dual-Core Intel® Xeon® processor 5100 series.
- Intel Trace Analyzer and Collector 7.0 applies event-based tracing in cluster applications and offers scalable analysis of performance data, recording of statistics, and multithreaded traces on all Intel® platforms.
- Intel MPI Benchmarks 3.0 is a comprehensive set of MPI benchmarks, formerly known as Pallas MPI Benchmarks (PMB).

## Performance

- Efficiently build scalable parallel MPI applications that can execute across multiple network architectures.
- Tune applications with powerful mathematical library functions in the Intel® MKL Cluster Edition.
- Easily collect trace information and analyze runtime behavior in detail, using the leading tools for performance analysis on clusters.

## Compatibility

Create parallel-computing software that has a high degree of compatibility with current standards as well as with Intel® tools and architecture:

### Linux Functionality for Intel® Architecture-based Clusters

- Supports Red Hat Enterprise Linux 3.0 and 4.0
- Supports SUSE Linux Enterprise Server\* 9 and 10

### Intel® Compiler Compatibility

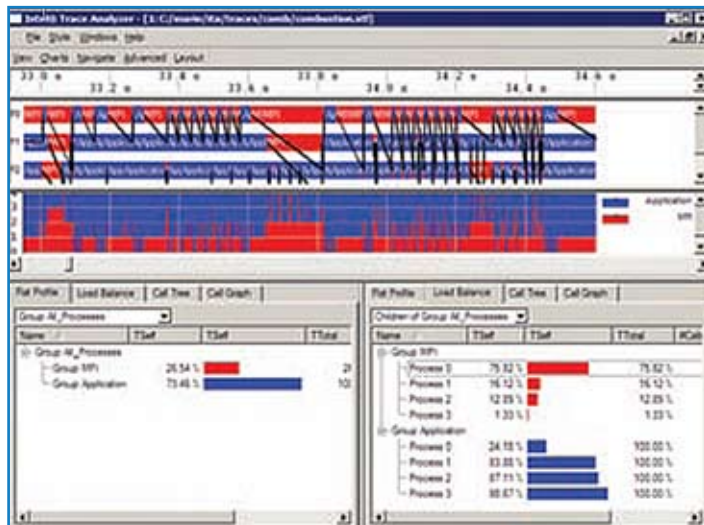
- Compatible with the Intel® Compilers 9.0 or 9.1 for Linux for both the C/C++ and Fortran programming interfaces on Intel processors.

### MPI-2 Standard Compliance and Portability

- Full MPI-2 standard with the exception of dynamic process management and user-defined data representations for file I/O.

### Processors

- Intel® multi-core processors
- Intel® Pentium® 4 processor
- Intel® Itanium® 2 processor
- Intel® Xeon® processors (32- and 64-bit)
- Intel® Celeron® processor



View concurrent behavior of parallel applications using Intel® Trace Analyzer and Collector.

## System Requirements

For details on hardware and software requirements, refer to: [www.intel.com/software/products/cluster/clustertoolkit](http://www.intel.com/software/products/cluster/clustertoolkit)

## 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.

## About Intel® Software Development Products

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

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

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

Download a trial version today.

[www.intel.com/software/products/cluster/clustertoolkit](http://www.intel.com/software/products/cluster/clustertoolkit)

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