Product Brief

Intel® Threading Building Blocks

1.1 for Windows*, Linux*, and Mac OS*

"We're excited about the potential of Intel® Threading Building Blocks to bring scalable performance automatically, without requiring us to update our code to support the latest multi-core processor."§

Gerry Hawkins
Maya Team Leader
Media & Entertainment
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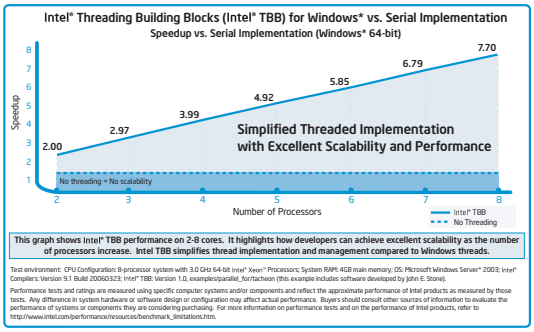
Thread Like an Expert

Intel® Threading Building Blocks 1.1 is a C++ runtime library that abstracts the low-level threading details necessary for optimal multi-core performance. The library is also inherently scalable, so no code maintenance is required as more processor cores become available.

Features

Ready to Use Parallel Algorithms

- Quickly employ commonly needed algorithms designed for parallel performance and scalability
- Generic templates let you easily tailor these algorithms to your needs
- Supports easy plug-in deployment into applications to deliver scalable software speed-up. Optimizes for both available cores and cache locality
- Reduce the work required to produce threaded software in many cases by means of pre-built parallel constructs

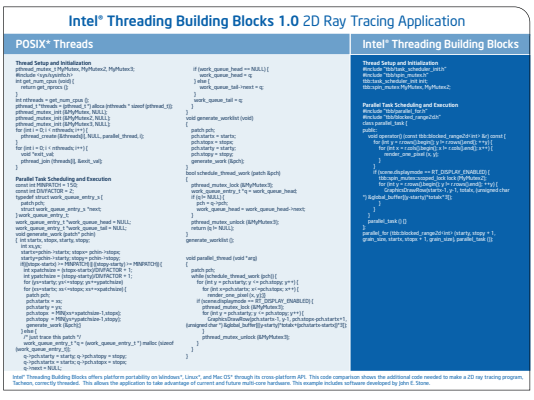


Better scalability and improved performance for Intel® Threading Building Blocks versus Windows* threads.

Cross Platform Support

Write applications once and deploy on multiple OS's.

- Provides a single solution for Windows*, Linux*, and Mac OS* on 32-bit and 64-bit platforms using Intel®, Microsoft, and GNU compilers
- Supports industry-leading compilers from Intel, Microsoft and GNU
- Speeds deployment of applications on multiple multi-core platforms



Side-by-side comparison of equivalent Windows* thread functionality shows dramatically simpler implementation with Intel® Threading Building Blocks versus native threads.

Performance

Intel Threading Building Blocks targets threading for performance.

Highly Concurrent Containers

Optimize the processor's ability to perform simultaneous tasks.

- Simplify multithreaded application development with interfaces designed for thread-safety and high concurrency
- Improve application quality by employing pre-tested data structures
- Improve application performance by enabling multiple execution cores or processors to work together more efficiently

Task Based Parallelism

- Lets the developer focus on higher levels of scalable task patterns instead of low-level thread mechanics
- Uses proven data-decomposition abstractions that efficiently use multiple cores
- Enables automatic load balancing
- Efficiently supports nested parallelism, allowing parallel components to be built from other parallel components

Compatibility

The Intel Threading Building Blocks are cross-platform (Windows, Linux, and Mac OS), support 32-bit and 64-bit applications, and work with Intel, Microsoft, and GNU compilers.

TBB also provides a Library Based Solution:

- Your C++ application simply calls the Threading Building Blocks library
- Standard C++ – no need to rewrite code in a new language
- Compatible with other threading packages
- Allows unlimited distribution of the runtime libraries with your software
- Seamlessly integrates into existing development environments

This library is specifically designed to work in concert with other threading technologies, providing a high degree of design and development flexibility. The templates implemented in Intel Threading Building Blocks rely on generic programming in order to provide high-speed and flexible algorithms with very few implementation constraints.

Intel Threading Building Blocks adds to the functionality of Intel® Thread Checker, Intel® Thread Profiler, and the Intel® Compilers, to enable the rapid implementation of high-performance threads in applications.

System Requirements

Please refer to www.intel.com/software/products/tbb for details on hardware and software requirements.

Support

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