



CAPS achieves performance breakthrough with more than 100x speed gain for a wave propagation application through its HMPP™ platform using NVIDIA® CUDA™.

Reno, Nevada, November 2007.

CAPS, a leading innovator in parallel programming tools, achieved over 400 gflops of single precision raw performance with an application provided by the CEA, a French government-funded technological research organization. This is more than a 100x performance gain compared to the best available CPU implementation. This permits the simulation of an acoustic wave propagation in such an accurate way that would otherwise have required months of computation.

The application is seamlessly adapted to the use of NVIDIA® GPUs as accelerators with the HMPP™ Hybrid Multi-core Parallel Programming platform. While the application control flow runs on the main CPU, the greedy computational parts, built by the CAPS engineering team with NVIDIA® CUDA™ programming environment, are integrated as software plugins and are dynamically managed by HMPP™.

CAPS HMPP™ toolkit is based on a set of compiler directives and comes with development tools and a runtime to simplify the use of hardware acceleration for conventional general purpose applications. The aim of HMPP™ is to integrate the use of hardware accelerators rather than porting applications to make use of them.

HMPP™ gives programmers a simple, flexible and portable interface for developing parallel applications whose critical computations are distributed at runtime over specialized and possibly heterogeneous cores.

HMPP™ key benefits:

Portability

- Preserve the legacy code.
- Independent from the hardware platform.
- Not locked to a vendor specific API.
- Work with any C and Fortran optimizing compilers.

Scalability

- Distributed computation between CPU and accelerators.
- Integrate with MPI and OpenMP.

See how HMPP™ works in the CAPS booth #3242 at SC07 in Reno, Nevada, from November 12 to 15, 2007.

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