

"I am impressed with the value that Acceleware delivered. The improved code efficiency has allowed us to complete modeling projects significantly faster than was previously possible. Modeling considerably larger and more complex earth models is also now tractable."

Lucy MacGregor, CTO, Rock Solid Images

Oil and Gas PROFESSIONAL SERVICES



Core Competencies

- Hybrid CPU/GPU system design
- Hardware and software recommendations
- Migration of applications to heterogeneous platforms
- Multi-core CPUs, cache-optimizations and vectorization
- Clustering and MPI
- Algorithm parallelization and code optimization
- Advanced parallel programming training
- Development of parallel HPC software

Domain expertise

- Seismic migration
- Elastic seismic modelling
- Finite difference methods
- Forward modeling and survey design for CSEM
- Reservoir simulation and engineering
- Linear Algebra

Programming Languages and 3rd Party Tool Experience

- CUDA™, OpenCL™, C++, Fortran, C++ AMP
- MPI, OpenMP, Pthreads, Intel MKL
- PGI Compilers, Matlab
- General scientific and HPC programming environments

Time is money. We Make Compute Intense Applications Run Fast - Really Fast

If your business relies on compute intensive applications to make key decisions then waiting for accurate answers can be extremely costly. Acceleware can help you obtain the results you need as quickly and cost effectively as possible.

Since 2004, Acceleware has worked with companies around the world to accelerate real world production codes to get better information faster. Using advanced programming techniques, that leverage the power of today's parallel hardware, Acceleware's professional service team specializes in developing and optimizing applications for maximum performance.

How We Can Help

Acceleration assessment - For clients new to high performance computing this assessment will provide hardware and software recommendations and an estimate of how fast an application will go.

Software development, porting & optimization - We are experts in porting and optimizing existing software for parallel platforms. The team can port the entire application or specific features and can optimize an existing application written for multi-threaded hardware.

Code commercialization - Acceleware has worked with many R&D departments to convert research algorithms into production quality code. The team is experienced in taking legacy code or multi-language applications and rewriting them to professional software standards.

Programmer training - Our courses are taught by experienced programmers who teach the secrets of writing high performance applications for parallel platforms.

Mentoring - Need a little extra help? Acceleware offers a mentoring service designed to help build the clients internal high performance computing skill set.

Your Partner for Achieving Higher Performance

Acceleware's professional staff is comprised of high performance computing software developers, mathematicians and scientists can help you to maximize the performance offered by today's computing technologies, translating to an increase in your bottom line.

Project Portfolio

The table below outlines just a few of the many and varied projects that we have completed and the results achieved. These results are typical, and illustrate the potential value of Acceleware's expertise:

Application	Work Completed	Results
RTM GPU Development	Migrated a large RTM application to CPU and GPU clusters including adding support for variable density TTI and high order wave propagators.	In progress
Reservoir Simulation	Developed a GPU accelerated version	5x speedup & increased capabilities
CSEM Modelling	Ported & optimized existing MATLAB code to C/C++ multi-threaded code	12.5x speedup & reduced data processing time
Drilling Simulation	Increased performance of well-site tool for well-bore analysis	18x speedup on laptops running in the field
Petrophysics Application	Added multi-threading support to existing code	8x speedup on the CPU & 14x speedup on the GPU
Full Waveform Inversion	Ported to OpenCL & optimized the application to run on GPUs	15x speedup & improved resolution and coverage
Seismic Application	Converted MATLAB research code into a standalone application & improved performance via algorithmic optimizations	20-30x speedup

Learn More About Acceleware's Professional Services

Contact us today to discuss how to make your compute intense applications run faster.

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