

The NAG HPC Libraries for Higher Education

The University of Liverpool purchases the NAG HPC Libraries from CHEST

Before purchasing the NAG HPC (High Performance Computing) Libraries the Computing Services Department at the University of Liverpool trialed the libraries using NAG's Benchmark Suite for the NAG Parallel and NAG SMP (Symmetric Multi-Processor) Libraries. Following a very successful evaluation of the SMP Library for Sun and the Parallel Library for Linux Beowulf Cluster undertaken by Mary Thorp, Principal Programmer Analyst, Computing Services purchased the NAG HPC Libraries on behalf of the University.

"The benchmark results gave us the confidence to purchase the NAG HPC Libraries knowing we could expect to get significant performance gains in terms of scalability and speed using these specialist libraries for our users in various scientific, medical and engineering disciplines. We are pleased that we can offer the NAG HPC libraries to our users for their own problems and applications."

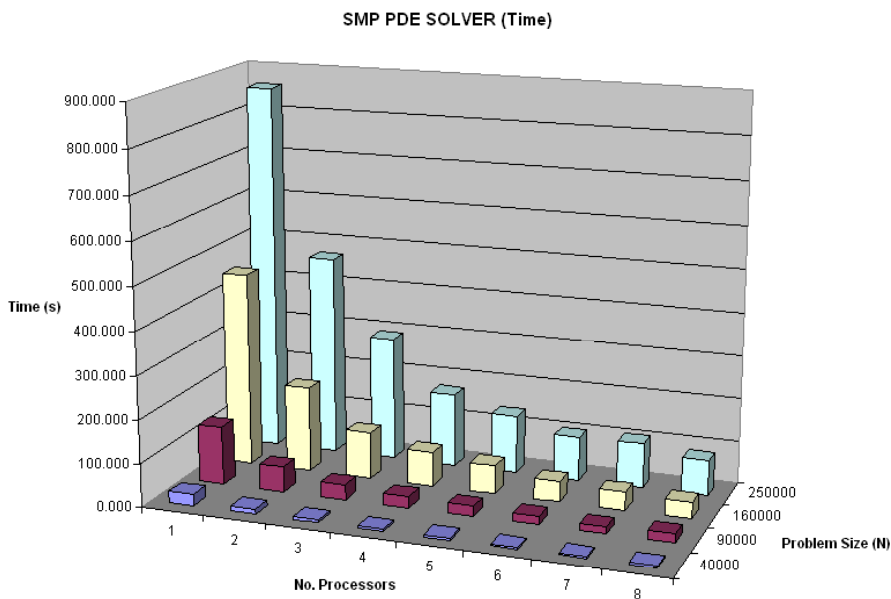


Figure 1 is an example of the solution of an elliptic PDE using the Parallelised Sparse Linear Algebra routines from the SMP Library. The bar chart shows significant reduction in computation time for different problems sizes as a consequence of using parallelised processing computation time. For example for the largest problem shown we can see a reduction in computation time by a factor of 11 when taking advantage of the SMP Library on an 8 processor machine.

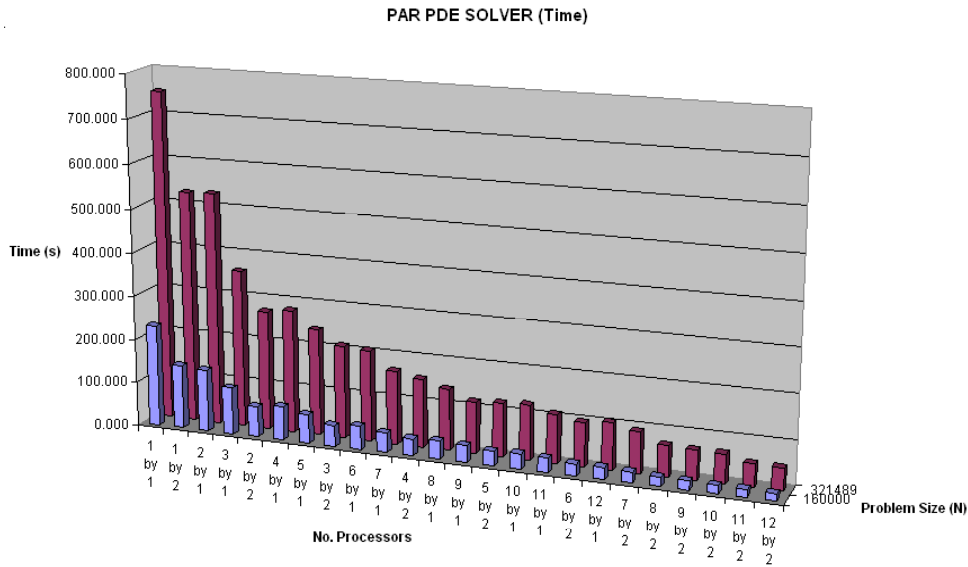


Figure 2 shows the same elliptic PDE problem as Figure 1 solved using the Parallelised Sparse Linear Algebra routines from the Parallel Library on a Linux Beowulf Cluster. Again, the bar chart shows significant reduction in computation time. The largest problem shown shows a reduction in computation time by a factor of 15 when taking advantage of the Parallel library on 24 processors of the cluster.

The NAG HPC Libraries, which consists of the NAG SMP Library and the NAG Parallel Library, are aimed at the needs of the HPC world, currently dominated by parallel systems. The SMP Library delivers unrivalled performance for shared memory parallelism; the Parallel Library provides powerful yet flexible components for Message-Passing parallelism.

If you would like more information about the NAG HPC Libraries please [click here](#) or email us at sales@nag.co.uk or telephone +44 (0)1865 511245.