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Woods Hole Group introduces high performance computing through its “Beowulf” Cluster

Falmouth, Mass. -- Woods Hole Group significantly increased its capabilities with the introduction of in-house high performance computing (HPC) this month. A team of Woods Hole Group engineers built a “Beowulf”, a networked cluster of computers that solves complex problems in a fraction of the time it would take a single system to solve.

“The Beowulf is a game changer for a company of our size,” said Dennis Aubrey, President of Woods Hole Group. “To have a computer that can provide significantly higher-resolution modeling in a fraction of the time means that we can provide our clients better and faster results for less money. This kind of technology puts us on a playing field with, or ahead of, the largest companies in our industry.”

Woods Hole Group’s Beowulf is built from a dozen Linux servers, each with a pair of 64-bit quad-core Intel Clovertown processors and 8 gigabytes of RAM. They are connected by a switched gigabit network with separate networks for inter-process communication and storage. It has a theoretical peak performance of 768 GFLOPS (For example, it can theoretically multiply two numbers together 768 billion times in a second).

Practically speaking, the computer will allow Woods Hole Group to provide its clients with a more detailed understanding of how water moves in the coastal environment and the complex coastal processes that influence their projects. The computer allows for more refined models with increased resolution and higher dimensions. “We can now simulate complex waves, currents, tides, and sediment transport processes using high resolution, three-dimensional scales and offer the services at an improved cost and timeframe.” said Aubrey. Intricate models involving the solution of quadrillions of equations can now be done
rapidly. In some cases, it means being able to solve problems that would be intractable with traditional computing resources.

Woods Hole Group had previously supplemented its own resources with a third party provider for its High Performance Computing needs.

“I’m extremely proud of our team of engineers who spent weeks building this computer,” said Aubrey. “It’s another reflection of the high-end work we do and our commitment to high standards of performance.”

Woods Hole Group is an international, environmental, scientific, and engineering consulting organization headquartered in Falmouth, Massachusetts. With its breadth of vision and emphasis on a sustainable future global environment, Woods Hole Group provides premier integrated solutions to meet the challenge of environmental problems worldwide. As a leader in environmental sciences and engineering, Woods Hole Group’s expertise includes environmental impact and risk assessment, measurement systems for real-time operational guidance, oceanography, and coastal sciences, engineering and planning. Woods Hole Group celebrated its 25th anniversary in 2011. For more information, visit www.woodsholegroup.com.

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