



South Africa's Centre for High Performance Computing (CHPC) Deploys Convey Hybrid-core Systems

—Users Benefitting from Heterogeneous Computing—

Richardson, Texas—December 10, 2012—Convey Computer today announced that the Centre for High Performance Computing (CHPC) is using two Convey HC-1^{ex} systems as part of their high performance cluster used to explore alternative architectures. Located in Cape Town, South Africa, CHPC is a compute resource for hundreds of researchers, institutes, and industrial partners.

The two Convey systems were installed at the CHPC's Advanced Computer Engineering (ACE) Lab, which focuses on evaluating prospective new hardware architectures such as those employing reconfigurable computing and many-core processing. The first user of the Convey systems is the South African National Bioinformatics Institute (SANBI), the largest bioinformatics research facility in South Africa.

"Our bioinformatics users found many of the alternative architectures at the ACE Lab difficult to use. And when they could use them, the architecture poorly mapped to their applications," explained David Macleod, HPC engineer at CHPC. "The Convey HC-1^{ex} systems solved both of these challenges."

According to Macleod, the Convey systems were a perfect fit for SANBI because the systems are easy to use and address a classic bioinformatics application challenge—scalability and memory bottlenecks. Convey's highly parallel memory approach dramatically increases effective memory bandwidth.

Bioinformaticians at SANBI are currently using the Convey systems to study *Venturia inaequalis*, a fungus that attacks apples. "Genomic research will help us learn how to combat the fungus and reduce its economic devastation in South Africa," explained Peter Van Heusden, Senior System Administrator at SANBI.

SANBI is using the Convey systems housed at CHPC to run several bioinformatics algorithms, including BLAST and Smith Waterman. “Using the Convey systems, we are able to run BLAST sixty times faster than previously possible on our in-house cluster,” continued Van Heusden. “The results for Smith Waterman are even more amazing; in certain circumstances, it is even faster than BLAST.”

In addition to obtaining faster results with the Convey systems, bioscientists at SANBI are using the system to do research that was previously impossible. “Short read assembly is extremely memory hungry,” stated Van Heusden. “Using the Convey system, we now are able to fit larger genomes onto the available memory, which allows us to complete research we could never attempt before.”

According to Happy Sithole, CHPC director, the Convey systems are an important part of the center’s goal of improving social and economic conditions in South Africa through advanced computational research. “We are pleased with the results we have seen on the Convey systems and look forward to using them for research in other areas,” concluded Sithole. “We are also looking to add more Convey systems, which will help CHPC continue to pursue significant and innovative research.”

About Convey Computer Corporation

Convey systems break power, performance and programmability barriers with the world’s first hybrid-core computer—a system that marries the low cost and simple programming model of a commodity system with the performance of a customized hardware architecture. Using the Convey hybrid-core systems, customers worldwide in industries such as life sciences, research, big data, and the government/military are enjoying order of magnitude performance increases.

For More Information:

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