

Sun kicks off super-computing project

By Audra Mahlong Posted: 19th March 2009

The deployment of a high-performance computing solution for the Centre for High-Performance Computing (CHPC) is under way, says Sun Microsystems.

The company was awarded the R35 million tender for the installation of the solution at the Cape Town-based centre last year. The CHPC is funded by the Department of Science and Technology and managed by the Meraka Institute, along with the Council for Scientific and Industrial Research (CSIR).

Sun Microsystems beat bids from IBM and Hewlett-Packard to be selected for the deployment of the solution.

The company, along with partners **Eclipse Networks** and Breakpoint Solution, will install an end-to-end solution based on a hybrid architecture that will provide an estimated 27 Teraflops of computing power.

The hardware is being assembled in Scotland and the US, and will be shipped to SA for installation and integration.

The deployment constitutes phase two of the development of the CHPC. Phase one was worth R10 million and consisted of an IBM-installed high-speed e1350 computer cluster, with 160 nodes, with an aggregate processing power of 2.5 Teraflops per second.

Stefan Jacobs, systems practice solution architect for Sun Microsystems, says the solution will provide SA with a world-class facility.

“Sun has worked closely with Intel to secure the next-generation Intel Xeon processor for the centre. The centre is also based on open source software, which is in line with government policy. The CHPC will be able to process complex problems in a fraction of the time that it takes on existing systems at other research institutions.”

High performance

Sun Microsystems says, at the core of the computing power, is an enterprise server with 64 quad-core processors, and a cluster of four modular systems – to be delivered in two stages. Stage one consists of one modular system with 48 blades, based on Intel processors, and stage two consists of three modular systems that house 144 blades, based on the next-generation Intel processor.

Sun Microsystems says the system will enable the CHPC to assemble and view 3D models of their data and the open storage solution will provide 480 Terabytes of data. All components will be connected through an Infiniband switch.

Jacobs says the deployment of this system will enable the CHPC to become globally competitive through the use of high-end information systems infrastructure.

“In doing so, the needs for the development of high-end IT skills in the region have been identified and we are working towards supporting these goals with local partners.”

Skills transfer

Jacobs says value-adds, such as technology transfer, training and skills development, will follow later in the year.

“Part of the project is the skills transfer that will take place. This will start during the actual building process and will be followed by a formal training programme in 2009, designed to provide local skills that will be critical to the success of the centre.”

He adds that research in the areas of alternative energy, weather prediction and healthcare will be boosted by the capabilities of this new system.

“For example, research is being conducted at the University of Limpopo relating to lithium crystals. This research aims to improve battery technology to deliver long-term power solutions. The research relies on computational modelling methods that will benefit from the processing power available at the CHPC,” Jacobs explains.

In the long-term, research and development in new technologies, which address Africa's challenges, will benefit from the CHPC, he says.

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