

DALCO delivers Supercomputer „Albert²“ to the BMW Sauber F1 Team

Volketswil, Switzerland – 14 December 2006 – Swiss DALCO, one of the leading companies for high-performance computing systems in Europe, has successfully delivered “Albert²” - the fastest Supercomputer in Europe and the third-fastest worldwide used in industry - to the BMW Sauber F1 Team for their demanding work in aerodynamics. With over 12 TeraFlops peak performance the system ranks 60th on the Supercomputer TOP500 November 2006 list.

The compute power will be used primarily for Computational Fluid Dynamics (CFD) calculations, using the ANSYS-Fluent software package, which is becoming increasingly important to compete for split-second advantages per race lap.

The Supercomputer was designed and built by DALCO using latest Intel Xeon technology to achieve its tremendous power. Thanks to the sophisticated design and the selection of the proper components “Albert²” is 5.5 times faster than its predecessor that is only two years old.

The compute section of the cluster consists of 512 Dual Core Intel Xeon 5160 processors (1024 processor cores), each running at 3.0GHz and with 4 Megabytes cache, 2'048 Gigabytes of physical memory and more than 20'480 Gigabytes of dedicated disk storage. These components are integrated with the Intel motherboard which uses sophisticated snoop filters for enhanced performance. Each compute node uses the Intel SR1500 chassis with optimized thermal characteristics. Two fail-safe Master units drive and supervise the computing complex.

“It is amazing how much performance we were able to get with the Intel Xeon technology in combination with the Fluent CFD software,” said Christian Dallmann, founder and CEO of DALCO. “My team can be very proud of having achieved the highest level of efficiency, which amazed experts.” François Dallmann, lead engineer at DALCO, added: “These outstanding results are possible because of our extensive know-how in this area and the distinctive selection of top-quality components, combined with Swiss quality work.”

The ultra-low latency high-bandwidth interconnect which provides high, sustained performance for the complex data exchange among the processor cores was selected for this critical task because extensive benchmarks proved that it offered the best overall data rates and lowest latency.

All data files are stored on a Parallel Cluster file system. The demand for massive, parallel data movement is being met by the system's scalable performance and capacity based on an object-based approach to storage.

Data movement, job processing and cluster management is performed via a no blocking high performance Gigabit switch which provides full network bandwidth to every single compute node.

The cluster utilizes SUSE 64-bit open-source Linux, integrated and optimized using DALCO's own cluster management software including enhanced system and environmental monitoring and best practices.

The Supercomputer is integrated into ten water cooled racks from APC with an overall dimension of 10 metres wide, 1.2 metres depth and 2.3 metres height and total weight of 21 tons. The total power consumption under full load is 122 KW. Compared to its forerunner the new Supercomputer provides nearly 4 times the performance per Watt.

"Albert²" is capable of performing 12,288,000,000,000 calculations per second. To achieve the same computing performance, the entire population of Munich (1.3 million) would have to multiply two eight-digit numbers every three and a half seconds for roughly a year.

DALCO, headquartered in Volketswil, Switzerland, are one of Europe's leading producers of cluster-based Linux solutions in the field of supercomputing and the leading supplier of Linux-based solutions in Switzerland. DALCO's product range encompasses Supercomputers, custom-configured servers and high-performance workstations as well as extensive SAN and NAS storage solutions all the way to high-availability, fault-tolerant systems. www.dalco.ch

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