

Eurotech scores first and second place in the Green500, the ranking of most efficient supercomputers in the world

Amaro (Italy) – June 28, 2013. Eurotech, a leading provider of embedded and supercomputing technologies, scored both the first and second place of the Green 500, the ranking of the most energy efficient supercomputers in the world, with the Eurora supercomputer installed at CINECA and the Aurora Tigon supercomputer installed at the Finmeccanica company Selex ES, specialised in information technology and security.

Eurora, the supercomputer of CINECA, entered in first place with 3210 MFlop/s per Watt, while the system of Selex ES, Aurora Tigon, was ranked 2nd with a value of 3180 MFlop/s per Watt. To give an idea of the importance of the result, the 3rd place of the Green500 is occupied by a system from the famous Cray with 2450 MFlop/s per Watt, which is a value 25% lower than that obtained from the computers produced by Eurotech.

The Eurora prototype is intended to progress in the optimization of the energy efficient high performance computing system towards the deployment of exascale computing system with a total cost of ownership affordable and sustainable.

Such a result was made possible by the combination of the energy aware Eurotech design and the high-performance efficiency of the NVIDIA® GPU-accelerators. The Eurora supercomputer is equipped, at each computing node, with two Intel Xeon E5-2687W CPUs and two NVIDIA® Tesla® K20 GPU accelerators based on the NVIDIA Kepler™ architecture.

Built on a very similar architecture, the Aurora Tigon HPC system, the commercial version of Eurora, is used by Selex ES to accelerate computation of algorithms and application regarding cyber security. Recently, fields like IT security and surveillance have required growing computational power due to the complexity of modern networks and the sheer amount of data to analyse.

Entering the Green 500 in top positions, Selex ES proves to have put energy efficiency as a rationale in their IT purchase decisions, looking to reduce operating costs. Thanks to savings in energy and space, solutions like the Aurora systems can reduce TCO (total cost of ownership) by an average of 30%-50%. Compared to a conventional air-cooled system, Aurora HPCs enable computing centers to save up to 50% on energy bills, while reducing space occupancy by 5 times due to higher density system configurations.

“It’s a result that makes us proud and that rewards our efforts and our investments,” said Roberto Siagri, President and CEO of Eurotech S.p.A. “It’s a success that has been achieved in spite of a national system that has not shown up to now sufficient sensitivity to Italian supercomputing technologies.”

“The paradox that we are living,” he added Siagri “is that with a ‘Brain in Italy’ approach Italian engineers has brought two machines in the top two positions of the Green500, but in the last two Italian public procurements for supercomputers the parameter of energy efficiency has been absent or only marginally considered. In Italy we complain that businesses invest little in research and innovation, but then the proof of facts is that even when companies invest and achieve excellent results are snubbed and the State, through its bodies, end up buying, in this context, products from non-Italian suppliers and less cutting-edge.”

“Eurora, the machine installed at CINECA in Bologna, is the outcome of a European research project, and was built largely thanks to European funds. Moreover, thanks to Europe, which is funding the DEEP project, coordinated by the Juelich Research Centre in Germany, we are designing an innovative generation of supercomputers that aims to ExaFlops, i.e. to reach a billion billion operations per second. Europe has long pursued a policy of promotion of European supercomputing technologies, understanding that are critical for industrial competitiveness and thus for the future economic development of the European Union itself: for the years to come, planned spending on HPC exceed the one billion euro a year.”

Eurotech contributes to add two liquid cooled systems to the top Green 500 positions, emphasizing the “green” flavour of it, since a technology like the Aurora direct hot liquid cooling adopted by CINECA and Selex ES, when compared to traditional air cooled supercomputers, not only increases the energy efficiency of HPC machines, but also allows to drastically cut air conditioning needs, reducing costs and carbon footprint.

Speaking about “green” implications, the Eurora system of CINECA, when compared to an equivalent performance air cooled system, brings a reduction of more than 2,300 tons of CO₂ emissions per rack in 5 years. In addition, the water heated up in the Aurora systems can be re-used to heat buildings, drive adsorption chillers for air conditioning or in industrial processes. The hot-liquid cooling and the compact design allow high density (350 TFlop/s per rack) and consequent savings in space, for a further reduction in the carbon footprint.

Note: the DEEP project is funded by the European Commission, under the Seventh Framework Programme (FP7-ICT-2011-7, Integrated Project No. 287530).

Eurotech

Eurotech (ETH.MI) is a global company based in Italy and with subsidiaries in Europe, North America and Asia. The Eurotech Group develops and markets miniaturized computers for special uses (NanoPCs) and computers featuring high computing capacity (HPCs – High Performance Computers). With these two product categories Eurotech aims to become a leader in the implementation of the pervasive computing scenario which, by exploiting the Cloud IT infrastructure, is capable of enabling an entire range of value-added activities and services in the transport, logistics, security, industrial and medical sectors. Learn more about Eurotech at www.eurotech.com

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