Press Release

Atos delivers EuroHPC Leonardo supercomputer, ranked 4th among the world's most powerful supercomputers

Paris, France – November 14, 2022 – Atos today announces that Leonardo, Italy's pre-exascale EuroHPC supercomputer, based on Atos' BullSequana XH2000, is now the 4th most powerful supercomputer in the world and 2nd in Europe, according to the TOP500 listing. Atos and its ecosystem of partners have already successfully delivered the main part of the Leonardo system, hosted and managed by Cineca computing center located in the Technopole of Bologna.

With this new cluster, Atos and Cineca will support the EU's mission and sovereignty by fighting against environmental and medical emergency situations. It will contribute to the mitigation and management of risks due to extreme situations, natural events, earthquakes, tsunamis, volcanic events, flash flood, and for the fight against pandemic and epidemic situations.

The modeling of scientific phenomena today requires high performance simulations, data analysis, artificial intelligence, and data visualization. The Leonardo system will enable extremely high throughput with low power consumption. This AI supercomputer will have a computing power of 250 petaflops when fully completed (on the High-Performance Linpack test basis), or 250 million billion floating point operations per second – 10 times more than Cineca's previous system – with a storage capacity of over 100 petabytes.

The system is built on Atos' BullSequana XH2000 supercomputer direct liquid-cooled (DLC) nodes, each with four NVIDIA A100 Tense Core GPUs and a single 3rd Generation Intel® Xeon® Scalable processor. The system relies on Micron's leading-edge DDR5 DRAM technology , to enable the extreme bandwidth and system performance required to meet High-Performance Computing demands. It will also use NVIDIA Quantum 200Gb/s InfiniBand networking platform, with smart In-Network Computing acceleration engines that enable extremely low latency and high data throughput to provide the highest AI and HPC application performance and scalability. It is equipped with approximately 3,500 Intel® Xeon® processors and 14,000 NVIDIA A100 GPUs with a performance of 10 ExaFLOPS in reduced precision, typical of AI applications. The Data-centric partition is based on BullSequana X2140 three-node CPU Blade and is equipped with two 4th Generation Intel® Xeon® Scalable processors (previously codenamed Sapphire Rapids) each with 56 cores.

Access to the data center, first delayed due to the pandemic, was quickly provided to the Atos and Cineca teams in late July, thanks a strong collaboration between both teams on-site. Since then, over 155 racks of equipment have been delivered, installed, and networked to allow the teams to do initial HPL (High Performance Linpack test) runs while the system is still being fully configured.

Anders Dam Jensen, Executive Director of the European High Performance Computing Joint Undertaking (EuroHPC JU), said: *"Today's announcement is another testimony to the fact that EuroHPC Joint Undertaking is delivering on its objectives. Despite Leonardo installation only having started a few months ago, it is already ranked as the 4th fastest supercomputer in the world. By combining the best of Artificial Intelligence and HPC technologies, this EuroHPC machine will be a valuable resource for European research and industry to innovate and bring benefits to citizens in fields such as medicine, energy, and agriculture. Leonardo's ranking on the Top500 list is another example of the results which can be achieved through European cooperation."*

Sanzio Bassini, Director of the HPC Department, CINECA said "*CINECA confirms its commitment in the development of the HPC ecosystem in Italy and in Europe. This new achievement, obtained in a challenging short time, demonstrates as European competence and technology is highly mastered and capable to provide to the public and private scientific community access to HPC system co-designed to meet at the same time high productivity capacity and extremely high computational performance"*

Emmanuel Le Roux, SVP, Global head of HPC, AI and Quantum, Atos, commented "T*oday's achievement is yet another example of Atos' commitment to Europe's economic and technological sovereignty in an energy-optimized environment. As a world-class leader in HPC, Atos is committed to pave the way to Exascale systems by pushing the technological boundaries with a hybridization strategy and by providing increased performance. We are proud to collaborate with EuroHPC and Cineca to make the best of HPC and AI technologies, helping Italian and European scientists and researchers prevent medical and environmental crisis."*

Atos now has 43 supercomputers in the TOP500, with two new systems in the ranking including Leonardo and Pégaso system hosted by Petrobras.

From November 13th to November 18th 2022, Atos will take part in SC2022: come meet our experts on booth #2809! You can also join the official launch of the Atos next-gen hybrid HPC, BullSequana XH3000, learn more about the new Nimbix Supercomputing Suite and hear the latest developments within our ThinkAI portfolio.

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About Atos

Atos is a global leader in digital transformation with 112,000 employees and annual revenue of c. € 11 billion. European number one in cybersecurity, cloud and high performance computing, the Group provides tailored end-to-end solutions for all industries in 71 countries. A pioneer in decarbonization services and products, Atos is committed to a secure and decarbonized digital for its clients. Atos is a SE (Societas Europaea) and listed on Euronext Paris.

The purpose of Atos is to help design the future of the information space. Its expertise and services support the development of knowledge, education and research in a multicultural approach and contribute to the development of scientific and technological excellence. Across the world, the Group enables its customers and employees, and member

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