Press release

An additional partition dedicated to AI on the Jean Zay supercomputer

Paris, 17th November 2021

In conjunction with the SuperComputing 2021 conference in Saint Louis (Missouri, USA), GENCI (Grand Équipement National de Calcul Intensif) - the French national agency in charge of high-performance computing and storage resources investements for academic and open industrial research, the CNRS by its national computing center : IDRIS (Institut du Développement et des Ressources en Informatique Scientifique) , Hewlett Packard Enterprise(HPE) and NVIDIA announce a further impressive increase of Jean Zay's computing resources dedicated Artificial Intelligence (AI) research, supercharged by the latest NVIDIA A100 Tensor Core technology to face the growing demand in this field.

In line with the announcement made in March 2018 by the French President about the national "AIForHumanity" plan, GENCI is providing sovereign computing resources to the French researchers in Artificial Intelligence and High Performance Computing (HPC) with the Jean Zay supercomputer.

Commissioned at the end of 2019, Jean Zay is one of the most powerful converged supercomputers in Europe. It is freely available for open research in HPC and AI. At date, there have been over 700 AI projects, from academia and industry (ranging from startups, SMEs and large-companies) mobilizing Artificial Intelligence methods who used this resource. An analysis of the projects carried out on this supercomputer shows a wide range of fields in which AI technologies are employed: large scale natural language processing (NLP), computer vision, decision support, smart cities, health and medicine (e.g. the fight against COVID19 and cancer), neuroscience, robotics, social sciences, chemistry, particle physics, astrophysics, climatology, and more.

To help researchers make the best possible use of Jean Zay's resources, the IDRIS application support teams have been hired of nine AI experts from CNRS and Inria, reaching a total of 21 people in the AI and HPC support teams.

Already one of the most powerful converged supercomputers in Europe, Jean Zay's configuration will continue to evolve, reaching a total of 3,152 GPUs, including both NVIDIA V100, and soon NVIDIA A100 Tensor Core GPUs, by early 2022. The power of the NVIDIA A100 is expected to more than double the current compute capacity for Artificial Intelligence workloads run on Jean Zay.

This extension will provide 52 additional HPE Apollo 6500 Gen10 systems each with eight NVIDIA A100 (a total of 640 GB of HBM2 memory per server), particularly well-fitted for large models in NLP or in vision.

This evolution is a major asset for the development of AI in France and in Europe since it will enable the development of innovative, even unprecedented, research projects on a global scale, such as the BigScience and COVID 19.

It will also contribute to the innovative energy infrastructure set up by IDRIS and the *Établissement public d'aménagement Paris-Saclay* (EPAPS), which will recycle the waste heat produced by Jean Zay to supply the heat and cold exchange network of the Paris-Saclay urban campus, providing thermic coverage equivalent to 1,000 homes. A first ever in Europe!

The deployment of this extension will also contribute to strengthening French and European scientific power in the field of AI, fostering convergence between HPC and AI while initiating original responses to energy and environmental challenges.

Funded by the French Ministry of Higher Education, Research and Innovation, this extension, which is planned to be installed in January 2022, is the result of joint work between GENCI, IDRIS-CNRS, HPE and NVIDIA.

Supercalculateur Jean Zay
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- Philippe Lavocat, Chairman and CEO of GENCI, said a few minutes before the opening of Super Computing 2021 that "*this extension of Jean Zay strengthens France's position as one of the leading European countries in academic and industrial research in artificial intelligence. This is one of GENCI's key missions, as set out in its strategic plan. It testifies to the success of the Jean Say supercomputer in the scientific community and the relevance of the response to their needs in AI*"

- According to Antoine Petit, Chairman and CEO of CNRS, "*AI and its applications are one of the CNRS priorities. Reinforcing the computing resources of Jean Zay hosted and operated by the IDRIS CNRS national supercomputing center is a key to answer to the multiple scientific challenges emerging in the French research communities. CNRS is then investing significant efforts to provide the best possible environment at IDRIS and support to users.*"

- Renaud Vedel, National AI Strategy Coordinator has quoted: *"Upon recommendation of the Villani Report, the French strategy for AI has placed equity of access to supercomputing as key. All researchers who publish according to the rules of open science, from public laboratories but also from private teams and especially startups, can benefit from this, with support from supercomputing engineering. And we can see today that this double bet is a winner: it accelerates the diffusion of AI in all scientific disciplines and technological fields and offers them new tools for discovery. We are pleased to support GENCI and IDRIS, which have caught up with its success, in this new expansion."*

About GENCI

Created by the French government in 2007, GENCI is a large scale Research Infrastructure, public operator organization that aims to democratize the use of digital simulation through high-performance computing combined with artificial intelligence, to support French scientific and industrial competitiveness.

GENCI has three missions:

- To implement the national strategy aiming at equipping French scientific open research with high-performance computing, storage and massive data processing resources associated with AI technologies, in conjunction with the three national computing centers;
- To support the creation of an integrated HPC ecosystem on a national and European scale;
- To promote digital simulation and HPC to academic research and industry.

GENCI is a civil company owned 49% by the French government, represented by the Ministry of Higher Education and Research, 20% by the CEA, 20% by the CNRS, 10% by the universities represented by the Conference of University Presidents and 1% by Inria.

About CNRS

The French National Center for Scientific Research is one of the most recognized and renowned public research institutions in the world. For more than 80 years, it has continued to attract talent at the highest level and to nurture multi-disciplinary and interdisciplinary research projects at the national, European and international levels. Geared towards the public interest, it contributes to the scientific, economic, social and cultural progress of France. The CNRS is above all 32,000 women and men, more than 1,000 laboratories in partnership with universities and other higher education institutions bringing together more than 120,000 employees and 200 professions that advance knowledge by exploring the living world, matter, the Universe, and the functioning of human societies. IDRIS is one of the CNRS laboratories, the French national center for intensive numerical calculations of high-performance computing (HPC) and artificial intelligence (AI) serving the research branches of extreme computing for the CNRS. IDRIS serves and accompanies a community of users consisting of more than 2200 researchers and engineers working on approximately 1000 projects from all scientific disciplines by offering a very high-quality applied support service (accompanying, advice and expertise).
For more information: www.cnrs.fr

About Hewlett Packard Enterprise

Hewlett Packard Enterprise (NYSE: HPE) is the global edge-to-cloud company that helps organizations accelerate outcomes by unlocking value from all of their data, everywhere. Built on decades of reimagining the future and innovating to advance the way people live and work, HPE delivers unique, open and intelligent technology solutions as a service. With offerings spanning Cloud Services, Compute, High Performance Computing & AI, Intelligent Edge, Software, and Storage, HPE provides a consistent experience across all clouds and edges, helping customers develop new business models, engage in new ways, and increase operational performance. For more information, visit: www.hpe.com

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