Press Release

Atos, UCL and Arm team up to offer wider cloud computing possibilities for life sciences applications

Paris, France – June 1st, 2022 – Atos and UCL today announce having successfully run the virus sequencing tool, Viridian, which is used to detect mutation of the SARS-Cov-2 strain of the coronavirus, using an Arm®-based Ampere® Altra® processor in a cloud native environment with Atos' integration expertise. This proof of concept (PoC) was coordinated by Atos' Life Sciences Center of Excellence which aims to foster a culture of exploration, discovery and co-creation to harness the power of digital technologies in order to advance precision health and accelerate the discovery and development of drugs.

With data growing exponentially and becoming more difficult to process for life sciences applications, data, scientists rely on high-performance computing and parallel computing to quickly process and analyse massive amounts of data.

The Arm Neoverse™-based platform, the Ampere Altra, is dedicated to cloud native workloads, meaning the simulation and the results can be achieved not only on-premises but directly on the cloud, on any type of HPC platforms and from anywhere.

This will be even easier with the use of Atos' Nimbix Supercomputing Suite; offering researchers and scientists flexible, scalable, and easy-to-use cloud solutions for compute-intensive workflows.

With more and more laboratories using Arm-based solutions, this successful PoC means that they will now be able to run Viridian on their systems, enabling them to study life science workflows and to detect various mutations in the SARS-CoV-2 genome, in order to ultimately help combat COVID-19.

This work has combined expertise skills from a team of Atos and Arm experts focusing on hardware and software optimizations, together with a scientific team from UCL dedicated to scientific applications for these specific use cases. This collaboration has enabled the optimization of both software and hardware in this co-designing effort to meet the demands of impactful and cutting-edge genomics workflows, which are already deployed in clinical settings.

> **Emmanuel Le Roux, Group SVP, Global Head of HPC, AI & Quantum at Atos,** commented *"Being the undisputed European leader in HPC is not only about delivering the most systems to European HPC centers in terms of PetaFlops but also about working closely with numerous European research and scientific institutions to empower various crucial data productions and simulations daily. This work, under the umbrella of the Atos Life Sciences Center of Excellence, demonstrates that collaboration between academia and industry through the power of supercomputing is creating new avenues for scientific breakthroughs. Today, we have once again*

shown the importance of hybrid computing to foster innovation and provide scientists with tangible life sciences applications."

Alex Wade, Research Associate at UCL, *said: "This codesign effort between Arm, Atos and UCL has allowed for the optimization of both new Arm hardware and cutting-edge genomics software, fortifying both for real world life science applications. Collaborating with industry partners has demonstrated a key idea for the future of HPC applications whereby hardware and software are tuned for performance in tandem, as opposed to the typical story of software continuously being updated to match new hardware releases. This work has been performed as part of the Centre of Excellence in Computational Biomedicine (CompBioMed) and was possible because of CompBioMed's wide interdisciplinary expertise. Arm and Atos were valuable partners in this work and we hope this work leads to future collaborations and can act as a template for other codesign activities."*

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