

Eviden enables quantum emulation in high-performance computing through dedicated software

Paris, France – November 18, 2024 – [Eviden](#), the [Atos Group](#) business leading in advanced computing today announces the launch of Qaptiva HPC, an innovative software tailored for high-performance computing (HPC) environments.

With Qaptiva HPC, research centers and organizations can now easily enhance large-scale simulation performance by implementing quantum computing emulation on their current HPC architecture, without integrating any additional hardware.

Qaptiva HPC stands out in the market by managing large-scale simulations within a distributed environment that utilizes multiple clusters. This unique software offers a comprehensive environment capable of running large-scale simulations with high speed and a high number of qubits on distributed nodes located in HPC clusters.

It is currently utilized in the France Hybrid HPC Quantum Initiative, where it has successfully achieved emulations of up to 43 qubits using the dedicated computing resources assigned to that task.

The first version of the software integrates the Distributed LinAlg¹ emulator, with which users can perform larger simulations, limited only by the memory size of their cluster, and achieve faster simulations.

Bob Sorensen, Chief Analyst for Quantum Computing, Hyperion Research commented "*Qaptiva HPC marks a significant advancement in quantum emulation for high-performance computing. Quantum simulators, such as Qaptiva, offer quantum computing researchers, software developers, and end users an opportunity to fine tune their quantum computing efforts within a classical compute environment, mitigating the uncertainties and related errors that are inherent in current generation NISQ systems. Perhaps equally important, Qaptiva can be run on users' existing HPC hardware. Such capabilities could prove to be a valuable asset for those looking to harness the power of quantum computing for numerical simulation.*"

Dr. Cédric Bourrasset, Global Head of HPC-AI and Quantum Computing, Eviden, Atos Group said "After recently granting access to an [IQM Spark quantum computer](#) through our offer, Qaptiva HPC is another crucial milestone that fulfills a promise made during the [launch of Qaptiva in April 2023](#) and demonstrates once again our innovation capabilities. Users can now easily perform quantum emulation

¹ LinAlg, which stands for linear algebra, provides the tools to describe and manipulate quantum states and operations, forming the basis of our emulation capabilities.

in their HPC environments with this unique software, benefitting from field-proven reliability, unmatched performance, and scalability.”

Eviden’s Qaptiva is an end-to-end quantum offering, with a complete quantum computing application development environment, enriched by consulting services and an ecosystem of software and hardware partners. With this new addition, Qaptiva now offers an appliance for emulation and software to program circuits, as well as a software component that can be installed on an HPC cluster for quantum computing emulation.

About Eviden²

[Eviden](#) is a next-gen technology leader in data-driven, trusted and sustainable digital transformation with a strong portfolio of patented technologies. With worldwide leading positions in advanced computing, security, AI, cloud and digital platforms, it provides deep expertise for all industries in more than 47 countries. Bringing together 41,000 world-class talents, Eviden expands the possibilities of data and technology across the digital continuum, now and for generations to come. Eviden is an Atos Group company with an annual revenue of c. € 5 billion.

About Atos

Atos is a global leader in digital transformation with c. 82,000 employees and annual revenue of c. € 10 billion. European number one in cybersecurity, cloud and high-performance computing, the Group provides tailored end-to-end solutions for all industries in 69 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.

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2 Eviden business is operated through the following brands: AppCentrica, ATHEA, Cloudamize, Cloudreach, Cryptovision, DataSentics, Edifixio, Energy4U, Engage ESM, Evidian, Forensik, IDEAL GRP, In Fidem, Ipsotek, Maven Wave, Profit4SF, SEC Consult, Visual BI, Worldgrid, X-Perion.

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