Europe launches Euro-Q-Exa quantum computer in Germany, strengthening sovereign digital infrastructure

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- Euro-Q-Exa will serve the scientific community and industry across Germany and Europe, enabling hands-on quantum research and application development within Europe's HPC ecosystem.
- Installed, hosted, and operated at Leibniz Supercomputing Centre (LRZ), ensuring local control, operational expertise, and long-term capability building.
- Developed by IQM Quantum Computers using its Radiance platform, designed to enable institutions to build, operate, and evolve their own quantum capability. Engineered for deep integration with high-performance computing, supporting scalable hybrid quantum–HPC workflows.
- Co-funded by the EuroHPC Joint Undertaking, the German Federal Ministry of Research, Technology and Space (BMFTR), and the Bavarian State Ministry of Sciences and the Arts (StWK).

Munich, Germany, 12th February 2025 – Euro-Q-Exa, the first EuroHPC Joint Undertaking quantum computer deployed in Germany, has been unveiled at the Leibniz Supercomputing Centre (LRZ) in Garching, Munich.

The deployment marks a significant step in Europe's effort to build long-term quantum capability as part of its sovereign digital infrastructure, alongside world-leading high-performance computing (HPC).

Installed, hosted, and operated at LRZ, Euro-Q-Exa is designed not merely to provide access to quantum computing, but to enable European researchers to build, operate, and scale quantum capabilities locally. By embedding the system within an established HPC environment, the system supports the development of hands-on expertise, operational know-how, and sustainable research capacity within Europe.

Euro-Q-Exa strengthens Europe's quantum ecosystem by enabling:

- **Local capability building** – Researchers operate, maintain, and evolve the system directly, developing practical expertise rather than relying on remote, black-box access.
- **European IP creation and retention** – algorithms, workflows, and applications developed on Euro-Q-Exa remain within European institutions, supporting long-term scientific and industrial value creation.
- **Deep HPC–quantum integration** – tight coupling with LRZ's supercomputing infrastructure enables realistic hybrid quantum–classical workflows and faster progress from experimentation to application.
- **Ecosystem collaboration** – universities, research institutes, and industry partners share a common platform to test use cases, train talent, and build interoperable solutions.

The system is based on IQM's Radiance platform and features 54 superconducting qubits. Euro-Q-Exa will be complemented by a second, more powerful system of 150 qubits by the end of 2026, further expanding Europe's operational quantum capacity.

By integrating Euro-Q-Exa directly into LRZ's supercomputing environment, European researchers can develop, test, and scale hybrid quantum–HPC applications in areas such as neurodegenerative disease research, computational pharmacology, and climate modelling. This approach allows quantum technologies to mature within operational research environments and supports their transition toward sustained scientific and industrial use.

Euro-Q-Exa is one of six quantum computers being integrated into Europe's most advanced supercomputing centres, alongside installations in Czechia, France, Italy, Poland, and Spain, reinforcing Europe's coordinated approach to sovereign digital infrastructure.

> **Henna Virkkunen, European Commission's Executive Vice-President for Technological Sovereignty, Security and Democracy:** "As the quantum market is still nascent, the European Commission is actively shaping it: Through EuroHPC, and together with Member States, we have already procured and co-funded the first six European quantum systems. Four are operational, and two more are under procurement. This is a clear demonstration of Europe's commitment to building sovereign quantum capacity on our own continent. The Leibniz Supercomputing Centre stands as a concrete example of this ambition in action. It shows how we can successfully support and scale up leading European providers such as IQM, who are at the forefront of quantum innovation. By anchoring these systems in Europe, we are strengthening our industrial base and ensuring that strategic technologies are developed and deployed in Europe, for Europe. With the new system — and its substantial upgrade planned for early 2027 — we are already enabling complex quantum computations today. This is not a distant promise; it is operational reality."
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> **Markus Blume, Bavarian Minister of State of Science and the Arts:** "Germany's first European quantum computer is being installed at the Leibniz Supercomputing Centre in Bavaria, which is no coincidence, but the result of our strong high-tech ecosystem. The fact is: Euro-Q-Exa is much more than just a new computer. It represents technological sovereignty and our ambition to develop our own digital infrastructure. At Germany's largest research campus in Garching, a vibrant hub for European ideas, we are combining quantum computing, supercomputing and artificial intelligence to create new dimensions in computing. This is precisely why we are also applying to host an AI gigafactory. Projects like this demonstrate Bavaria's readiness to take responsibility for Europe's digital future. Garching is sending out a strong signal: this is where the computing resources that enable innovation and strengthen our technological capabilities are being created – this is where the future is not only being conceived but also being calculated."
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> **Anders Dam Jansen, Executive Director EuroHPC Joint Undertaking:** "The inauguration of Euro-Q-Exa represents another milestone in our journey towards a world-class European quantum computing infrastructure. This new EuroHPC quantum system reinforces our commitment to providing researchers, industry, and the public sector with cutting-edge computational resources, fostering innovation and technological sovereignty across Europe."
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> **Prof. Dieter Kranzlmüller, Chairman of the Board of Directors, LRZ:** "With Euro-Q-Exa, we are combining the strengths of quantum and supercomputing. This gives researchers the opportunity to test new approaches and implement groundbreaking calculations, opening up new scientific dimensions using European technology. Here at LRZ, we are looking forward to embarking on some exciting research projects and gaining new insights."
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> **Dr Jan Goetz, CEO of IQM Quantum Computers:** "The countries that own their open quantum infrastructure, not just access to the cloud will lead. Europe is building toward that: locally operated systems, education of the new generation, hybrid HPC integration, and the institutional expertise that only comes from ownership."

About Leibniz Supercomputing Centre (LRZ)

For over 60 years, the Leibniz Supercomputing Centre (LRZ) has been one of Europe's leading high-performance computing centres, providing advanced digital infrastructure to a broad scientific community across disciplines including engineering, life sciences, physics, and digital humanities. Located in Garching near Munich, LRZ operates national and European-scale supercomputing systems and supports users with deep expertise in HPC application development, portability, and scalability. LRZ is actively shaping the future of digital infrastructure by integrating emerging technologies, including quantum computing.

About IQM Quantum Computers

IQM Quantum Computers is a global leader in superconducting quantum computers, delivering full-stack quantum systems and cloud platform access to research institutions, universities, high-performance computing centers, and national laboratories worldwide. IQM's on-premises deployment model gives customers direct ownership and control of their quantum infrastructure. Founded in 2018, headquartered in Finland, it has over 350 employees. IQM operates across Europe, Asia, and North America. IQM has announced its plans to become the first publicly listed European quantum company on a major U.S. stock exchange by merging with Real Asset Acquisition Corp. (Nasdaq: RAAQ); with a dual listing on the Helsinki Stock Exchange also under consideration.

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