

# NVIDIA Grace Drives Wave of New Energy-Efficient Arm Supercomputers

## UK Research Alliance, GW4, Building 6x More Energy-Efficient Supercomputer for Climate Science, Medical Research and More

ISC—NVIDIA today announced a supercomputer built on the [NVIDIA Grace™ CPU Superchip](#), adding to a wave of new [energy-efficient](#) supercomputers based on the Arm® Neoverse™ platform.

The Isambard 3 supercomputer to be based at the Bristol & Bath Science Park, in the U.K., will feature 384 Arm-based NVIDIA Grace CPU Superchips to power medical and scientific research, and is expected to deliver 6x the performance and energy efficiency of Isambard 2, placing it among Europe's most energy-efficient systems.

It will achieve about 2.7 petaflops of FP64 peak performance and consume less than 270 kilowatts of power, ranking it among the world's three greenest non-accelerated supercomputers. The project is being led by the University of Bristol, as part of the research consortium the GW4 Alliance, together with the universities of Bath, Cardiff and Exeter.

Isambard 3 joins a growing wave of NVIDIA Arm-based supercomputers around the world, with additional systems that include GPUs being built at the [Swiss National Supercomputing Centre](#) and the [Los Alamos National Laboratory](#) in the U.S.

"As climate change becomes an increasingly existential problem, it's vital for computing to embrace energy-efficient technologies," said Ian Buck, vice president of hyperscale and HPC at NVIDIA. "NVIDIA is working alongside the Arm Neoverse ecosystem to provide a path forward for the creation of more energy-efficient supercomputing centers, driving important breakthroughs in scientific and industrial research."

"From climate change to medicine, supercomputing is already enabling academic and industry leaders to take on some of the world's biggest challenges," said Mohamed Awad, senior vice president and general manager of infrastructure at Arm. "Expanding on important areas of research requires a level of performance and energy efficiency that Arm Neoverse uniquely delivers, and through our collaboration with NVIDIA, we're proud to bring this to life in the Isambard 3 system."

### Isambard 3 to Supercharge Breakthroughs in Life Science, Medicine, More

Isambard 3, to be built by Hewlett Packard Enterprise, will enable Europe's scientific research community to supercharge breakthroughs in AI, life sciences, medical, astrophysics and biotech. It will be able to create detailed models of exceptionally complex structures, such as wind farms and fusion reactors, to help researchers unlock new advances in clean and green energy.

The Arm-based NVIDIA Grace-powered system will also continue Isambard 2's work of simulating molecular-level mechanisms to better understand Parkinson's disease and find new treatments for osteoporosis and COVID-19. These compute-intensive applications benefit from the highest-performing cores, highest memory bandwidth and the optimal memory capacity per core provided by Grace.

"Isambard 3's application performance efficiency of up to 6x its predecessor, which rivals many of the 50 fastest TOP500 systems, will provide scientists with a revolutionary new supercomputing platform to advance groundbreaking research," said Simon McIntosh-Smith, principal investigator for the Isambard project and professor of HPC at the University of Bristol. "The Arm-based NVIDIA Grace CPU enables the breakthrough energy efficiency required to push the boundaries of scientific discovery and solve some of humanity's most difficult challenges."

Once the system goes into production in spring 2024, Bristol expects the number of registered users to increase significantly beyond the current 800.

### Accelerating Scientific Discovery

NVIDIA's accelerated computing platform comprises [NVIDIA H100 Tensor Core GPUs](#), NVIDIA Grace CPU Superchips, [NVIDIA Grace Hopper™ Superchips](#), [NVIDIA Quantum-2 InfiniBand networking](#) and a full suite of NVIDIA AI and HPC software.

Learn more about [NVIDIA's accelerated computing platform for HPC](#) at [ISC](#).

### About NVIDIA

Since its founding in 1993, [NVIDIA](#) (NASDAQ: NVDA) has been a pioneer in accelerated computing. The company's invention of the GPU in 1999 sparked the growth of the PC gaming market, redefined computer graphics, ignited the era of modern AI and is fueling the creation of the industrial metaverse. NVIDIA is now a full-stack computing company with data-center-scale offerings that are reshaping industry. More information at <https://nvidianews.nvidia.com/>.

Certain statements in this press release including, but not limited to, statements as to: the benefits, impact, performance, features and availability of our products, collaborations, services and technologies, including NVIDIA Grace CPU Superchip, Isambard 3 and Isambard 2 supercomputers, NVIDIA H100 Tensor Core GPUs, NVIDIA Grace Hopper Superchips, NVIDIA Quantum-2 InfiniBand, NVIDIA AI, the Arm ecosystem and HPC software; our collaborations with the UK Research Alliance, the Bristol & Bath Science Park, the University of Bristol, GW4 Alliance, University of Bath, University of Cardiff, University of Exeter, Swiss National Supercomputing Centre, Los Alamos National Laboratory and Hewlett Packard Enterprise and the benefits, impact, performance, features, and availability thereof; the growing wave of NVIDIA Arm-based supercomputers around the world; climate change becoming an increasingly existential problem and embracing energy-efficient technologies being vital; working alongside the Arm ecosystem to provide a path forward for the creation of more energy-efficient supercomputing centers, driving important breakthroughs in scientific and industrial research; and energy efficiency being crucial for designing supercomputers that will propel innovation and help humanity are forward-looking statements that are subject to risks and uncertainties that could cause results to be materially different than expectations. Important factors that could cause actual results to differ materially include: global economic conditions; our reliance on third parties to manufacture, assemble, package and test our products; the impact of technological development and competition; development of new products and technologies or enhancements to our existing product and technologies; market acceptance of our products or our partners' products; design, manufacturing or software defects; changes in consumer preferences or demands; changes in industry standards and interfaces; unexpected loss of performance of our products or technologies when integrated into systems; as well as other factors detailed from time to time in the most recent reports NVIDIA files with the Securities and Exchange Commission, or SEC, including, but not limited to, its annual report on Form 10-K and quarterly reports on Form 10-Q. Copies of reports filed with the SEC are posted on the company's website and are available from NVIDIA without charge. These forward-looking statements are not guarantees of future performance and speak only as of the date hereof, and, except as required by law, NVIDIA disclaims any obligation to update these forward-looking statements to reflect future events or circumstances.

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