



# NVIDIA Powers Next-Generation Supercomputer at University of Edinburgh

## DiRAC Selects NVIDIA HDR InfiniBand Connected HGX Platform to Accelerate Scientific Discovery at Its Four Sites

ISC—NVIDIA today announced that its NVIDIA HGX™ high performance computing platform will power Tursa, the new DiRAC supercomputer to be hosted by the University of Edinburgh.

Optimized for computational particle physics, Tursa is the third of four DiRAC next-generation supercomputers formally announced that will be accelerated by one or more NVIDIA HGX platform technologies, including [NVIDIA A100 Tensor Core GPUs](#), [NVIDIA HDR 200Gb/s InfiniBand networking](#) and [NVIDIA Magnum IO™](#) software. The final DiRAC next-generation supercomputer is to feature NVIDIA InfiniBand networking.

Tursa will allow researchers to carry out the ultra-high-precision calculations of the properties of subatomic particles needed to interpret data from massive particle physics experiments, such as the Large Hadron Collider.

“DiRAC is helping researchers unlock the mysteries of the universe,” said Gilad Shainer, senior vice president of networking at NVIDIA. “Our collaboration with DiRAC will accelerate cutting-edge scientific exploration across a diverse range of workloads that take advantage of the unrivaled performance of NVIDIA GPUs, DPUs and InfiniBand in-network computing acceleration engines.”

“Tursa is designed to tackle unique research challenges to unlock new possibilities for scientific modeling and simulation,” said Luigi Del Debbio, professor of theoretical physics at the University of Edinburgh and project lead for the DiRAC-3 deployment. “The NVIDIA accelerated computing platform enables the extreme-scaling service to propel new discoveries by precisely balancing network bandwidth and flops to achieve the unrivaled performance our research demands.”

The Tursa supercomputer, built with Atos and expected to go into operation later this year, will feature 448 NVIDIA A100 Tensor Core GPUs and include 4x NVIDIA HDR 200Gb/s InfiniBand networking adapters per node. NVIDIA Magnum IO GPUDirect® RDMA enables the system to provide the highest level of internode bandwidth and scalability for extreme-scale scientific applications using Lattice Quantum ChromoDynamics.

The system is run by DiRAC — the UK’s integrated supercomputing facility for theoretical modeling and HPC-based research in astronomy, cosmology, particle physics and nuclear physics — with sites hosted at the University of Cambridge, Durham University, the University of Edinburgh and the University of Leicester.

### CSD3 at University of Cambridge, COSMA-8 at Durham University

NVIDIA announced at GTC 21 in April that the [Cambridge Service for Data Driven Discovery](#), also known as CSD3, will be enhanced with a new 4-petaflops Dell-EMC system with NVIDIA HGX A100 GPUs, BlueField® DPUs and NVIDIA HDR 200Gb/s InfiniBand networking, which will deliver secured, multi-tenant, bare-metal HPC, AI and data analytics services for a broad cross section of the U.K. research community. CSD3 is projected to rank among the world’s top 500 supercomputers. The DiRAC Data Intensive Service at Cambridge is part of the CSD3 system.

NVIDIA also announced at GTC 21 that [Durham University’s new COSMA-8 supercomputer](#) — to be used by world-leading cosmologists in the U.K. to research the origins of the universe — will be based on Dell technology and accelerated by NVIDIA HDR 200Gb/s InfiniBand networking.

Further details about the fourth system at the University of Leicester are expected later this year.

Tune in to the [NVIDIA ISC 2021 Special Address](#) at 9:30 a.m. PT to get an overview of the latest news from NVIDIA’s Marc Hamilton, followed by a live Q&A panel with NVIDIA HPC experts. Learn more about DiRAC and its facilities at [NVIDIA’s ISC 2021 digital panel discussion](#).

### About NVIDIA

[NVIDIA](#)’s (NASDAQ: NVDA) invention of the GPU in 1999 sparked the growth of the PC gaming market and has redefined modern computer graphics, high performance computing and AI. The company’s pioneering work in accelerated computing and artificial intelligence is reshaping trillion-dollar industries, such as transportation, healthcare and manufacturing, and fueling the growth of many others. 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 and services; NVIDIA HGX powering Tursa; Tursa allowing researchers to carry out ultra-high-precision calculations of the properties of subatomic particles; DiRAC accelerating scientific exploration across a

diverse range of workloads; CSD3 being enhanced with a new 4-petaflops Dell-EMC system with NVIDIA HGX A100 GPUs, BlueField DPUs and NVIDIA HDR 200Gb/s InfiniBand networking; CSD3 ranking among the world's top 500 supercomputers; Durham University's COSMA-8 supercomputer being used by world-leading cosmologists in the U.K. to research the origins of the universe; and the expected timing of the fourth system at the University of Leicester 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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