

# STFC's 'Joule' in the crown is UK's most powerful supercomputer

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Daresbury Laboratory

The Science and Technology Facilities Council's (STFC) Daresbury Laboratory in Cheshire is officially home to the UK's most powerful supercomputer, capable of more than a thousand trillion calculations per second.

The IBM Blue Gene/Q at Daresbury, named Blue Joule, has been ranked number one in the UK, and number 13 in the world, in this year's Top 500 list of supercomputers, which was revealed this week at the International Supercomputing Conference 2012 in Hamburg.

Blue Joule, which is on average eight times more energy efficient than most other supercomputers, forms part of STFC's new future software research centre at its Daresbury Laboratory in Cheshire. The facility was

announced in March this year following £37.5m investment by the Department of Business Innovation and Skills (BIS) into High Performance Computing (HPC) in the UK, as part of its e-infrastructure initiative. One of the world's foremost centers in software development, the facility was formed following the start of a three year collaboration with IBM as a direct result of this investment.

Blue Joule achieved its first major milestone this week as it became the first system in the UK to run a Petaflop application, where a Petaflop is one thousand trillion calculations per second, the equivalent of a million laptops. This milestone represents a thousand-fold increase in supercomputing performance in the UK in 10 years, since the last such milestone, the Teraflop, was first achieved back in 2002.

Breakthroughs in HPC could result in finding cures for serious diseases or significantly improving the prediction of natural disasters such as earthquakes and floods. Supercomputers will speed up the innovation cycle, enabling

new products to be developed quicker and the time to market made shorter. They will also provide the ability to simulate extremely complex systems, such as modelling the Earth's climate or the human brain, the data from which would overwhelm even the most powerful systems in use today.

Professor John Bancroft, Project Director of the Centre and Head of STFC's Campus Centre Projects, said: "Blue Joule forms a major part of our brand new HPC facility at Daresbury.

Supercomputers have become essential to the modern world, aiding research and innovation, and enabling companies to compete effectively in a global market. I therefore invite academic researchers and industry to come to STFC and to design and test their solutions to highly complex

problems on what is now officially the UK's largest [supercomputer](#). STFC is one of only a small handful of owners in the world of this particular BlueGene/Q system, but by the year 2020 supercomputers will be thousands of times faster again. Therefore, as part of our new facility at Daresbury, Blue Joule will also play a key role in developing the software that will run on these machines of the future."

Professor John Womersley, Chief Executive at STFC said: "This calibre of cutting edge technology is essential to provide industry and academia with the tools needed to drive innovation growth. It is also essential to the UK in maintaining its position as a global scientific research leader. I was therefore thrilled to hear that Daresbury hosts the most powerful supercomputer in the UK, but also that STFC's laboratories are home to two more supercomputers ranked within the top 200 globally, and that the University of Edinburgh's DIRAC, also a BlueGene/Q and funded by STFC, is at number 20 in the world."

Provided by Science and Technology Facilities Council

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