ARCHER supercomputer targets research solutions on epic scale

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A new generation supercomputer, capable of more than one million billion calculations a second, is to be inaugurated at an event at the National Museum of Scotland today (Tuesday 25th March 2014).

The £43 million ARCHER (Academic Research Computing High End Resource) system will provide high performance computing support for research and industry projects in the UK.

ARCHER will help researchers carry out sophisticated, complex calculations in diverse areas such as simulating the Earth's climate, calculating the airflow around aircraft, and designing novel materials.

Its magnitude and design will enable scientists to tackle problems on a scale that was previously thought impossible.

The system, at the University of Edinburgh's Advanced Computing Facility at Easter Bush, has up to three and a half times the speed of the HECTOR supercomputer system, which it replaces.

ARCHER's twin rows of sleek black cabinets are supported by the newly installed UK Research Data Facility.

The system brings together the UK's most powerful computer with one of its largest data centres. This creates a facility to support Big Data applications, which has been identified by the UK Government as one of its Eight Great Technologies.

The building housing the ARCHER system is among the greenest [computer](#) centres in the world, with cooling costs of only eight pence for every pound spent on power.

ARCHER was supplied by US computing experts Cray and is funded and owned by the Engineering and Physical Sciences Research Council (EPSRC). The Massively Parallel Processor uses Cray's XC30 hardware. Intel's Xeon E5-2600v2 processor series enables ground-breaking performance, scalability, and maximises energy efficiency.

Professor David Delpy, CEO of the Engineering and Physical Sciences Research Council, said: "EPSRC is proud to unveil this new ARCHER service. It will enable researchers in engineering and the [physical sciences](#) to continue to be at the forefront of computational science developments and make significant contributions in the use of Big Data to improve understanding across many fields and develop solutions to global challenges."

Professor Sir Timothy O'Shea, Principal of the University of Edinburgh, said: "The University of Edinburgh has for many decades been a pioneer in High Performance Computing. Now that Big Data is reaching into an even greater range of areas we are delighted to have the ARCHER facility and its support at Edinburgh. Together with the UK Research Data Facility, we and the Research Councils have a facility unique in the UK, combining some of the world's most powerful computers with a vast datastore and analysis facilities. We will work with the Research Councils and UK researchers to generate world-leading research and business impact."

Stephan Gillich, Director Technical Computing EMEA, Intel, said: "ARCHER is the highest ranked UK supercomputer on the Top 500 list of November 2013. Based on Intel Xeon E5 v2 processors, the system is designed to deliver sustained performance and scalability, providing researchers and scientists with a powerful, reliable and productive tool."

Provided by Engineering and Physical Sciences Research Council