SUCCESS STORY

OCRE reassures senior managers about moving to public cloud

University of Bath Case Study

The University of Bath is one of the UK's leading research-intensive universities. It has 500 active researchers and a £150m research portfolio, with a strong focus on high impact interdisciplinary research. The university offers degree courses in engineering and design, the humanities and social sciences, science and management and it was awarded gold in the Teaching Excellence Framework (TEF) 2017. It has around 19,000 students, 30% of whom are from overseas.

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> Dr Roger Jardine, Deputy Director of Technology, University of Bath

RESEARCHER
Roger Jardine & Steven Chapman

ORGANISATION
University of Bath

FIELD OF STUDY
Generic

LOCATION
United Kingdom

OCRE RESOURCES USED
Cloud Services

A flexible alternative to on-site HPC

"We have had an on-site high-performance computing (HPC) facility for a long time," Says Dr Roger Jardine, deputy director of technology at the university. "But in the digital, data and technology (DDaT) group we believed public cloud would offer HPC users more flexibility so in 2019 we set up a pilot project to test the theory."

During the 12-month project they tested key software applications used in HPC to see if they could work as well in a pre-production Microsoft Azure public cloud environment, and to assess the cost implications.

"The Azure environment had to work well for researchers and teaching staff because both groups use the service. We'd only consider adopting a new solution if it works for everyone," Says Roger.

SOLUTION

Advancing research practice

The project's final report showed that functionality in Azure was at least as good as in the current HPC set-up. It also highlighted implications for the future of research – notably, that enhanced scalability allows researchers to work more efficiently and in ways that suit their own workflows, without having to plan their requests for compute time and then wait for it to become available.

"We've seen that public cloud will allow our researchers to work differently," says Roger. During the trial one researcher said it had the potential to allow them to accomplish three years' work in three months. It offers possibilities for people to do things more quickly and potentially develop new techniques and think in new ways. "Because it's rapidly scalable we can just experiment with ideas and see what happens."

The report also showed that the cost of public cloud would not be any higher under the DDaT team's proposal to procure the solution using the OCRE cloud framework. The university's senior management signed off on the proposal to migrate to public cloud and, in summer 2021, the university began its move to production.

"The OCRE framework was key to the decision to go ahead, and not just because of the discounted pricing it offers," says Roger. "Because it's a GÉANT initiative the people who manage our budgets are confident that the framework delivers cloud solutions that are robust, EU-compliant, scalable and tailored to the needs of higher education."

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> Dr Steven Chapman, advancing research computing manager, University of Bath

All plain sailing?

The OCRE framework makes procurement more straightforward but the University of Bath has faced challenges in adopting public cloud. They're mostly cultural, according to Dr Steven Chapman, Bath's advancing research computing manager.

"We've been preparing people with a communications plan," he says. "People find it hard to let go of things and not to worry about moving data off-site, because security is obviously a huge priority."

"They also worry about cost, especially about how to cost the project accurately and where to allocate expenditure. The OCRE framework helps to calm those worries and we're also encouraging them to think about value as well as cost – to consider what else we will be able to do when we have the infrastructure fully set up."

OCRE funding for research

The OCRE consortium has allocated 9.5m euros (ocre-project.eu/funding-opportunities) in service credits for projects that offer real-world examples of how commercial cloud services can support improved research outcomes, and a University of Bath physics researcher has won one of these grants, worth €75,000.

His research project relies on HPC to perform density functional theory (DFT) simulations for predictive modelling of new 2D materials and heterostructures. It has probably succeeded in getting OCRE's additional funding because it involves giving undergraduates experience in using HPC and cloud technologies during their final year research projects, says Steven.

"Cloud is supporting our teaching programmes and we hope many of the undergraduates involved will build their final year projects around it. The extra scalability of public cloud will give the students the ability to get 'on' when they need to, and that's important when they only have a few months to get things finished."