

University of Canberra boosts data-driven learning and research with Nutanix.

Nutanix Cloud Platform provides the University with scalable IT to extend the use of AI and ML in relevant courses while powering research in areas like bioinformatics.

The University of Canberra is all about preparing for the future of higher education and connecting its digital environment with its people, experiences, physical spaces, and region, offering students, academics, and researchers an optimal learning and teaching environment to achieve the best academic outcomes. With Nutanix, the University can cost-effectively scale its IT to support the artificial intelligence (AI) and machine learning (ML) systems that help deliver scientific breakthroughs and promote better learning. By saving millions of IT dollars, the University has more resources to develop solutions such as its virtual desktop infrastructure for remote access to important data.

Challenges

The University of Canberra is a leading higher education institution based in the Australian capital of Canberra. It's ranked in the top 100 young universities worldwide, with more than 15,500 students, academics, researchers, and professional staff. Its research culture is also thriving, with leading research centres and institutes including the Centre for Conservation Ecology and Genomics, Health Research Institute and more.

With AI- and ML-based systems becoming key to research programs and many academic courses, pressure on the University's IT is growing. Moreover, the University is having to provide high performance IT both inside and outside of the campus network. With online learning normalised, it must deliver remote access to students and teachers to work from multiple locations.

Solutions

To keep pace with the changes, the University of Canberra has transformed its IT capabilities with the Nutanix Cloud Platform. In 2013, following the construction of a new data center, the University, working with Nutanix partner Qirx, deployed Nutanix hyperconverged infrastructure (HCI) nodes running a VMware hypervisor as a first step towards leaner, easier-to-control and higher performance IT.

The University began migrating workloads, including its Oracle Real Application Clusters for its Oracle database, over to Nutanix, and moved from VMware to the Nutanix AHV hypervisor. As the Nutanix Cloud Platform, which natively includes AOS storage, supported more applications, the IT team consolidated its disaster recovery (DR) data center into a micro-sized DR facility. What's more, it adopted Nutanix End User

Industry

Education

Location

Australia

Website

<https://www.canberra.edu.au>

Key Benefits

Support next-gen higher education

- Provided the performance for AI- and ML-based systems to support better academic and research outcomes

Transform bioinformatics research capabilities

- Delivered performance to support a pioneering study in improving the health of Australian

Reduce IT costs

- Lowered the expense of delivering IT by millions of dollars

Products

Nutanix Cloud Infrastructure

- AOS Storage
- AHV Hypervisor

Nutanix Cloud Manager

- Cost Governance

Applications

- HR system
- Finance system
- Student management system
- Student portal
- Oracle Real Application Clusters for Oracle database

Computing Solutions to facilitate their desktop-as-a-service (DaaS) capabilities, so students and teachers gained remote access to data and applications.

After these successes, the IT team also implemented NCM Cost Governance, which provides a single pane of glass to monitor usage across Azure, AWS, and Google Cloud. Says Matt Carmichael, CIO at the University of Canberra, “It has saved us a couple times. One instance was when our backups in Google Cloud weren’t being aged out appropriately, increasing our bills exponentially. We were able to quickly get it back in line with Nutanix technology.”

Customer Outcomes

Supports Next-Gen Education

With Nutanix, the University of Canberra is making its research culture stronger, forming more partnerships with local industry and establishing areas of excellence. It’s giving students access to cutting-edge AI and ML systems to improve their academic outcomes across all disciplines, including computer sciences and postgraduate researchers – such as those conducting research at the University’s Visual and Decision Analytics Lab (VIDEA) and the Australian Geospatial Health Lab (AGeoH-L). “We recently added specialist majors in Robotics, AI, and Data Science, a Master of Data Science, and Post Graduate specializations in AI and Machine Learning. To teach these courses effectively requires a significantly increased capacity for GPU-enabled computing resources,” Carmichael states.

Right now 90 percent of all systems are running on Nutanix Cloud Platform, including HR, Finance, Student Management systems and the backend to the student portal. Both production and disaster recovery (DR) environments are operating on Nutanix and delivering high reliability. “The fact that we run so many workloads on Nutanix is testament to its performance,” states Carmichael.

Delivering IT Power Where it Counts

Even though AI, ML and analytics demand huge amounts of computing power, the University can easily scale up its Nutanix infrastructure as needs arise, extending Nutanix clusters and switching from CPU to GPU-based nodes. “With Nutanix, we’ve been able to create a very high performance VDI to give students the brute force to do complex calculations,” says Carmichael.

He continues, “Improving the student experience by offering a flexible, remotely accessible teaching environment with enough computing

“We are adapting our IT using Nutanix to support AI and ML across the University, including our research centers. It’s also helping deliver the applications that students and teachers need remotely.

Matt Carmichael
CIO, University of Canberra



resources for AI and deep learning has been one of the strategic goals of the Faculty of Science and Technology.”

Helping Transform the Community, Industry and Society

The University has the IT capabilities to support vital research across multiple fields, including public health. It's supporting the Australian Geospatial Health Lab (AGeoH-L), whose partners also include Esri, a global leader in geographic information system. In addition, researchers at the University know they can launch projects in areas like bioinformatics, which require large amounts of CPU and terabytes of memory, without any capacity challenges. Adds Carmichael, “There are no unacceptably long periods to complete analyses because we're not limited to the performance of front-end devices like workstations thanks to our VDI.”

Achieves Multi-Million-Dollar IT Savings

Through Nutanix, the University is making savings of more than AU\$3.6 million (\$2.2 million), which it can reinvest in developing its infrastructure. As a result of installing thin clients for its VDI and avoiding traditional desktops, it is saving AU\$130,000 (\$82,000) over three years. Plus, it's been able to consolidate server and storage assets by 78 percent, leading to an additional projected saving of more than AU\$1.5 million (\$946,000).

Adds Carmichael, “With our micro-DR facility, it only required three racks of space, instead of the existing 24 – this led to upfront financial savings of around AU\$2 million (\$1.2 million), and ongoing savings in operational costs and energy usage.”

Next Steps

With the University looking to invest more than AU\$5 billion (\$3 billion) in future development, the IT team is working on a digital strategy to support larger campuses and more distributed learning. Development of the plan is in its early stages, but it's clear hybrid multicloud will play a key role. “Both cloud and Nutanix are part of the conversation around the University's future,” states Carmichael.

Learn more at www.nutanix.com

Partner

Based in Canberra, Qirx is supporting the University of Canberra as it develops its Nutanix Cloud Platform. With Qirx's expertise, the University is maximising the value of every Nutanix investment.



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