

# INTEGRATE HYBRID CLOUD TO INNOVATE IN EDUCATION

Establish a Scalable and Fluid Enterprise IT Architecture to Compete and Collaborate

## Connecting Environments

There is growing consensus among higher education thought leaders that institutional leadership and curricula could benefit from adopting agile startup models. Universities have always operated in much the same way but changing demographics and learner demands have higher education institutions looking for change that allows for flexibility while spurring creativity and entrepreneurial thinking. Technology is viewed as a key catalyst to needed change yet universities are challenged to make the necessary digital transformation required to succeed with new business priorities.

In a recent survey, 85 percent of 1,500 global college-bound respondents claimed that an institution's capabilities, such as classroom technology integration and availability of online learning options, were key determinants in their selections.<sup>1</sup> In many ways, the career trajectory of university graduates reflects the offerings of the institutions they attend, making it vital for universities and colleges to exemplify the principles they wish to foster in their students. Competition for students from traditional and nontraditional education institutions and pressure to more closely align student skills with the demands of the global workplace are important factors driving change and innovation in higher education.

Today, the ability to rapidly adopt new learning, teaching, and business models have academic and administrative leadership conferring with campus CIOs to more aggressively pursue IT and business transformation initiatives that improve offerings while also reducing costs.

## Launch New Higher Education Products, Services, and Ecosystems with Hybrid Cloud

Experts have suggested the best way for universities to compete is to innovate, adopting fluid architectures that encourage online learning and partnerships with other universities and private industry. The physical setting for a large-scale research effort involving many parties can vary from multiple concurrent settings that include university labs, corporate centers, and national labs to a single dedicated research campus community.<sup>2</sup> Modern IT-as-a-service capabilities, cutting-edge research environments, supercomputing, virtual labs, and creative learning spaces are best enabled by hybrid cloud services.

The VMware Cross-Cloud Architecture™ provides campus IT teams with cloud freedom and control to run, manage, connect, and secure their applications across clouds and devices in a common operating environment. As the most complete and capable hybrid cloud architecture, the Cross-Cloud Architecture empowers consistent deployment models, security policies, visibility, and governance for all applications, running on premises and off, regardless of the

<sup>1</sup> NMC and EDUCAUSE. "The NMC Horizon Report > 2016 Higher Education Edition," 2016.

<sup>2</sup> R&D Magazine. "How Academic Institutions Partner with Private Industry," April 2015.

underlying cloud or hypervisor. A software-defined data center (SDDC) platform together with VMware's cloud management platform and virtualized networking solutions preserve IT policies across multiple clouds.

### Simplify and Scale with Hybrid Cloud

By integrating public clouds into existing software-defined computing environments, colleges and universities can future-proof their infrastructure in support of business and education transformation. They can leverage hybrid clouds to easily scale capacity and services up and down and drastically decrease deployment times for new environments and services. Hybrid clouds also support online learning initiatives that increase enrollment and revenue, as well as lower operational requirements for research computing environments while simplifying, securing, and improving access to associated computing power and data.

While simplifying IT complexity, hybrid cloud enables IT to quickly implement high availability and disaster recovery solutions to support critical systems. With traditional disaster recovery solutions, businesses must figure out what their budget can support and make tough decisions about which applications will not be covered. This process has been simplified thanks to the virtualization of IT resources and the advent of disaster recovery offerings via private and public clouds.

Oxford University, for example, has shifted to offering some services as a hybrid cloud model, allowing the academic institution to expand and use the capacity of other clouds.

### Manage Multiple Clouds

Moving to hybrid cloud infrastructure has also been a way for IT leaders to respond to new performance, manageability, and security challenges. While minimizing downtime, VMware cloud solutions enable decentralized departmental decision makers to support their own diverse program needs. University leaders consider VMware a strategic IT partner because VMware solutions help schools compete and succeed in an increasingly competitive education landscape. With VMware technology, an institution's central IT department can provide powerful cloud and infrastructure-as-a-service solutions faster, cheaper, and more securely than internal customers can do it themselves while empowering them with control over their specific IT environments.

VMware's cloud management platform, VMware vRealize® Suite, is an enterprise-ready, cloud management platform that delivers a complete solution for managing a heterogeneous, hybrid cloud. A true enterprise-ready cloud management platform, vRealize provisions resources on "Day One" and meets "Day Two" operational needs by letting campus IT staff continuously monitor resource health, performance, capacity and cost. It also helps IT reclaim unused capacity and deliver that capacity where it's needed today, not leave it where it was needed yesterday. Given that most institutions are adopting hybrid cloud computing as their approach to cloud, the enterprise-ready solution also supports the concept of "brokering," providing support for sourcing and provisioning resources across both private and public clouds.

Eamon Kearns, Senior Director of Emerging Solutions, IS&T, MIT says, "Essentially, we want to get out of the business of running data centers that take up a lot of

“Five years ago, we would have needed servers across Europe for our calculations, but now this cloud platform suits our needs very well”

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## OVERVIEW

Modern, cloud-friendly infrastructure enables higher education institutions to rapidly adapt to changing learning, teaching, and business demands.

The VMware Cross-Cloud Architecture drives the digital agenda by providing a simple way to run, manage, connect, and secure apps across clouds and devices in a common operating environment—giving campus IT teams the freedom to innovate across clouds.

## BENEFITS

- Scale quickly to meet changing learning and staff needs
- Speed app development and deployment
- Lower operational costs by simplifying cloud management across clouds
- Choose the right cloud for the right workload—without compromising security and compliance

space and resources. Both are precious here, which is why we are actively moving that footprint off campus and freeing up those resources to work on high-value projects.”

## Provide Always-On Access to Online Learning and Research Computing

Recent studies show online enrollment continues to outpace overall higher education enrollments<sup>3</sup> and that a blended learning structure (face-to-face plus online learning) leads to increased engagement with course material, promoting more active learning during class meetings and ultimately improving student success.<sup>4</sup> Investments in VMware vCloud Foundation™ and VMware vCloud® Air™ technologies from ecosystem partners such as OVH, are giving higher education IT leaders the unprecedented ability to move workloads and applications into and between clouds, creating new opportunities to affordably meet the expanding needs of online learning and cutting-edge academic research—without downtime and all while keeping cross-campus data secure.

To make learning more accessible and affordable, universities are also integrating public clouds to enable virtual computing labs—with high-performance applications such as computer-aided design apps—both on campus as well as on BYO devices. VMware’s solution provides an exceptional user experience and high-performance graphics virtualization powered by NVIDIA GRID. Through virtual labs, students have more access to lab time, improving overall experiences and help college departments grow remote and online learning experiences as additional revenue streams. The solution also makes it possible for higher education institutions to accommodate more students without incurring new buildings and infrastructure costs. Pierce College, for example, delivers reliable online classes using VMware cloud infrastructure.

## Learn More VMware Cloud Solutions for Higher Education

VMware’s support for any cloud, any application, any device with a common operating model gives colleges and universities the flexibility to implement on- and off-premises solutions that support academic goals and business requirements. Campus IT teams enjoy choice in how to build, run, secure, and manage higher education investments in private, public, and hybrid clouds. VMware’s Cross-Cloud Architecture is an ideal platform for campuses to securely deploy a cloud vision that supports the rapid deployment of learning resources while reducing costs and IT complexity headaches.

Visit <http://www.vmware.com/go/edu>.

<sup>3</sup> Life Sciences Education. David Gross, University of Massachusetts, “Increased Preclass Preparation Underlies Student Outcome Improvement in the Flipped Classroom,” 2015

<sup>4</sup> Babson Survey Research Group. “The 2015 Survey of Online Learning,” February 2016.

