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Cloud computing offers many benefits to higher education institutions, which explains why so many are embracing it.

In many way, the advantages that cloud computing offers colleges and universities is no different than any other organization. However, there’s no doubt that a hybrid cloud solution, which is a combination of on-premise technology, and private and public cloud, ideally tied together with a management software platform, has particular appeal and brings unique capabilities to higher learning institutions and their IT teams.
Query any university or college IT team about the challenges and barriers to productivity, deploying applications, backing up files, avoiding viruses and many other common responsibilities, and you’ll likely find that they struggle with achieving all this and more when relying only on an on-premise technology platform.

Formidable tasks range from deployment of the latest app, to accommodating a soaring number of new personal devices, to providing easy, flexible, yet secure access — all this and more while working with limited staff and budget dollars.

In this e-book, we’ll explore:

• These and other challenges of IT at the higher learning level
• Discuss how hybrid cloud and management platforms works
• Outline the top five reasons hybrid cloud with a management platform is ideally suited for universities and colleges
• Explore available solutions today

In 2011, only 5% of U.S. colleges and universities were not considering cloud migration.¹
The world of tradition IT is under pressure.
In 2017, 50 percent of total IT spending will be outside of the formal IT organization.
By 2018, traditional businesses and schools will own fully half of the world’s server computing capacity.
These kinds of statistics mean that pressure is driving change. In education, change is driven by turbulence and innovation. In IT, change is driven by stability and predictability.
The pressures and challenges that IT teams at higher learning institutions today include:

• **Doing more with less** – continuing to enhance the organization’s technology capabilities and service offerings to students, teachers, and staff while working with stagnant or reduced capital expenditure or operating budgets

• **Increased expectations for apps and services** – the rapid deployment of application and web-based student services without added hardware, software, and staff resources

• **Seasonal network bandwidth gaps** – the ability to efficiently and cost-effectively manage the major variances in network usage that comes from lulls in the summer months with few students on campus, to big spikes as a flood of users logon at the beginning of the school year

• **BYOD** – being able to provide sufficient bandwidth and security to accommodate personal devices with the challenges of a more traditional IT infrastructure – smartphones, laptops, and tablets are now the norm on campus

• **Security and control** – protecting high-stakes academic research, adhering to regulations governing student privacy, and maintaining a safe and secure campus remain top priorities for IT teams today

These and many more challenges to higher learning IT teams are driving more and more organization to cloud-based solutions, particularly hybrid cloud. So how does hybrid cloud work?
How it works
Straddling two worlds

To fully understand the hybrid cloud, a brief discussion on the challenges of modern IT management and the typical required dollar investments is warranted.

When you look at the IT universe today, there are really two worlds on the landscape – traditional data centers and cloud.

Traditional data centers are characterized by:
- Tight coupling between infrastructure and apps
- Expensive, vertically integrated hardware
- Siloed infrastructure and operations
- Highly customized processes and configurations

In the cloud model, you’ll find distinctions such as:
- Developers have a critical business role
- Micro-services and modern apps create new complexity
- The server is no longer the center point
- Application data is business data
Modern IT investments
IT departments today have a shopping list of investments required to meet the needs of any organizations. These IT investments revolve around six key functions:

- **Goverm**: Subscriptions, Cost, Policy
- **Secure**: Detect, Prevent
- **Protect**: Backup, Recovery
- **Build**: DevOps, Tooling, Packaging
- **Config**: Monitoring, Orchestration, Patching
- **Monitor**: Analytics, Discover, Alerts
In addition to these six functional areas where IT investments are required, ideologies for these shifting investment focus on three mission-critical capabilities and factors, which are particularly relevant to higher learning institutions.

**Speed**
- Setup within minutes
- Faster troubleshooting
- Real-time innovation

**Flexibility**
- Connect to existing tools
- Custom solutions and data
- Traditional and modern cloud

**Simplicity**
- Easy-to-use dashboards
- Reduced management infrastructure
- Cohesive solutions
How hybrid cloud and IT management works

In terms of IT management, a hybrid infrastructure requires a new way of thinking about management solutions. To meet the growing needs of your university or college, it’s best to have a single view across the hybrid cloud, reducing the need for multiple tools and interfaces.

It’s also important to get up and running rapidly, without spending valuable time on integration. And to plan effectively and maximize efficiency, you need deep analytics that allow you to identify issues and maximize performance.

Bottom line, the right management solution makes you faster, more agile, and more efficient in delivering IT services to student, teachers, staff, and administrators that rely on them daily.
The approach to a hybrid cloud varies by organization, but for higher learning institutions, an ideal model for deploying and managing such a solution is comprised of four pieces:
Product Spotlight: Microsoft Operations Management Suite (OMS)

Microsoft OMS is the IT management solution for the hybrid cloud, and offers maximum flexibility and control. OMS offers a new approach to managing your institution that is fast, cost-effective and meets new needs and workloads, applications, and cloud environments. Microsoft OMS delivers:

- Simplicity – single portal for all your management tasks, no infrastructure to maintain
- Time to value – onboard fast, no content to create, connects to your on-premises data center
- Easy to integrate – add new servers, or connect to your existing management tools in minutes
- Hybrid and open – manage workloads across Windows, Linux, hybrid, public clouds, Azure, AWS

Read more
Benefits
Benefit #1: Visibility

A hybrid cloud solution that includes an IT operations management software platform can help provide enterprise-class, real-time operational intelligence. This can give you true visibility and deep insight into every aspect of the infrastructure, which gives IT the opportunity to increase efficiency and take action to drive performance.

It’s also vital that the modern management software you choose takes advantage of the flexibility of cloud deployment. It should offer functionality and tools such as:

- Log analytic capabilities that enable your IT team to collect and analyze machine data from virtually any source
- Instant access to critical information through one integrated console using data generated across devices, operating systems, workloads, and user actions
- The ability to easily troubleshoot across multiple data sources and quickly identify the root cause of operational and security issues

The upshot of this increased visibility is simple – greater agility for your learning institution. Armed with deeper and broader insights about your environment, both your IT managers and institution administrators can make better and more informed decisions.

OMS offers visibility benefits such as:

- End-to-end monitoring
- Analytics and data correlation
- Preemptive health, capacity, and usage tracking
- Real-time alert management

Read more
Benefit #2: Control

Exercising better control over your technology assets and data is an important advantage to integrating with an IT management software platform. Ideally, your platform gives you the maximum flexibility and control for cloud-based management of your infrastructure.

For example, with OMS, you can manage any instance in any cloud, including on-premises, Azure, AWS, Windows Server, Linux, VMware, and OpenStack (plus, at a lower cost than competitive solutions). Built for the cloud-first world, OMS is designed to help learning institutions meet new challenges in education, as well as accommodate new workloads, applications and cloud environments as your university or college evolves and grows.

Control also means having better, automated ways of doing the most frequent tasks. With a large distributed and dynamic environment, it is time consuming and error-prone to conduct configuration and remediation tasks manually against thousands of nodes and instances. Plus, you want to be able to detect potential configuration issues, track group policies and files changes, and easily execute many other common and vital tasks.

The right modern management platform for cloud-based solutions feature automation capabilities that enable you to:
- Automate frequent tasks
- Save time from manual, time-consuming tasks and processes
- Avoid error-prone cloud management tasks with precision and scale

OMS help you gain greater control over IT with features such as:
- Desired configuration management
- Workflow orchestration
- Service management
Fact:
In a survey of CIOs in higher education institutions, 50% reported that they employ a hybrid model for their data storage.
Benefit #3: Protection

If your college or university has been forced to undergo a review of backup procedures as a result of data loss, you may have found that it was too late to do anything about it. Nowadays, the explosion of data growth complicates backups and doesn't make this critical function any easier, especially in light of the potentially huge and critical amount of data generated by an academic research team, for example. Making the task even more difficult is the complexity and challenges of hardware and software updates not included in the backup environment.

A hybrid cloud can help protect your learning institution from the negative impact of data loss by ensuring you have reliable, secure and comprehensive backup technology and processes in place. One of the biggest advantages to a complete hybrid cloud solution, as described here, is that it will better ensure preparedness in the event of a disaster. Cloud-based availability makes it easy to execute a data recovery plan, even when it is customized.

In addition, a hybrid cloud solution makes backing up your data—an essential task for any institution—automated and seamless. Many institutions still rely on students, teachers and staff to backup data on hard drives. A hybrid cloud solution can be configured to backup encrypted data to the cloud, without requiring or depending on users to take any extra steps, or for your IT team to update hardware or software.

Backing up your data to a configured hybrid cloud solution based on your institution’s needs can help provide advantages such as:

- Greater data security
- Higher reliability
- Faster audits and assured compliance
- Quicker, more dependable data recovery
- Time savings from automation

OMS protection features include:

- AlwaysOn backup and disaster recovery
- Continuous health monitoring
- Automated backup and disaster recovery process
Fact:
Almost one-third of higher education IT professionals identified security concerns as the single biggest barrier to cloud adoption.
Benefit #4: Security

Naturally, security and protecting data from hackers and other malicious attacks is a very high priority for higher education IT teams. Adding to the security mix of challenges is BYOD – the plethora of devices that students, teachers, and staff use to access your institution’s network, data, and technology assets.

When considering cloud solutions, many IT teams in the past have been understandably weary of migrating their valuable data to a location that seems ambiguous and out of their control. Plus, the reality is that a presence in many more environments – apps that you now have scattered across your on-premises databases and your private and public clouds – means you have much more surface area that could be attacked.

But, when your hybrid cloud solution includes a modern management system, your IT team can effectively mitigate and tackle today’s broad security challenges. For example, your management platform should have the capabilities to:

- Spot and respond to attacks no matter the technology or platform
- Detect breaches and threats with system-wide malware assessments
- Protect your apps against attacks and malware, as well as standardize the way you get updates
- Automatically notify you when security updates or patches are needed across all of your apps, data centers and platforms, whether cloud-based or on-premises

**OMS provides security features such as:**

- Thorough systems health checkup
- Full exposure into IT environments
- Audit, forensic, and breach analysis
Benefit #5: Application Management

IT teams today must deal with a consistent flood of modern applications. This can create a management nightmare without the right tools to efficiently manage all these applications, and all the potential performance issues, or security and network headaches that may come with them.

Not too long ago, IT teams could take a hands-on and manual approach to addressing any application errors or issues by looking through dozens — sometimes hundreds — of logs from an on-premise data center. But, now, with the explosion of applications and data, your IT team would likely need to look through hundreds of thousands — if not millions — of logs spread across multiple environments to find the problem with the application. The fact is that solving application problems manually is much more difficult and time-consuming today (if not impossible) without the right modern management tools.

The ideal hybrid cloud management solution provides application management advantages such as:

- Efficient deployment, monitoring, and managing of applications
- Simplified process automation and monitoring of resources
- A single portal for all your management tasks with no infrastructure to maintain
- A much more cost-effective way to deploy and accommodate new applications

OMS provides application management tools such as:

- Real-time performance visibility
- Dynamic application dependency mapping
- Faster fault analysis
Why Microsoft?
We’ve explored the challenges IT teams at learning institutions must face today, and the pressures that these challenges have put them under.

These pressures have driven colleges and universities to look at cloud-based solutions for greater cost-effectiveness, on-demand availability that caters to seasonal shifts in demand and network usage, and many other significant advantages.

We’ve outlined the top five reasons hybrid cloud with a management platform is ideally suited for universities and colleges, and explored available solutions today. As you’ve learned, these five areas can have a major impact on any learning institution.

Microsoft technology, such as Azure and OMS, can play a critical role in putting together a hybrid cloud solution that meets your needs, helping your institution safeguard your data, accommodate growth, remain competitive, and provide more and better services.
Get Started

If you’re a college or university administrator, and would like to gain these five benefits for your higher learning institution, all it takes is three steps...

1. Identify your priorities.

2. Choose solutions that best fit the needs on your campus.

3. Talk with your Microsoft rep who can connect you with the right partners.
Sources and references

2. Drive Digital Business Using Insights From Gartner Symposium’s Analyst Keynote 21 November 2014